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THE HEALTH MAGAZINE

HYGEIA

MAGIC OF TOYS

Burns • Indigestion or Heart Disease? • Noise

AN AMERICAN MEDICAL ASSOCIATION PUBLICATION

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THAT LASTS THE WHOLE YEAR!
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BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

The child of today has the benefit, during its *formative* years, of those protective factors and food substances that increase appetite, promote growth, make straight bones, and prevent many diseases which stunt physical and mental development. The mother who takes full advantage of her physician's command of these resources improves her child's immediate as well as future health and at the same time contributes her share toward the improvement of the race.

BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

This space is devoted to the interest of better babies by
MEAD JOHNSON & COMPANY, *Evansville, Indiana*

DECEMBER 1938 Vol. 16 No. 12

HYGEIA

THE HEALTH MAGAZINE

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PRESENTING

EUGENE F. TRAUB, M.D., professor of dermatology, University of Vermont College of Medicine, and assistant professor of clinical dermatology and syphilology, New York Post-Graduate Medical School (Columbia University). Dr. Traub outlines first aid to the injured in case of burns and discusses classification, causes and treatment.

ALFRED E. PARKER of the department of physical education, Berkeley (Calif.) High School, whose series, "Training for Athletics and Health," and numerous other articles on sports and athletics have appeared in HYGEIA.

SAMUEL GITLOW, M.D., who presents valuable information for the diabetic in a radio address which was given under the auspices of the Bronx County Medical Society.

WILLIAM R. P. EMERSON, M.D., professor of pediatrics, emeritus, Tufts College Medical School, who describes the sinister causes which are threatening our lives with premature extinction and tells how we can check them. Dr. Emerson is the author of "The Diagnosis of Health."

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HOPE FOR WOMEN AFRAID

MOST WOMEN drift toward change of life with fear and dread in their hearts.

Change of life *is* a difficult period for any woman. The changes taking place within her are often bewildering and alarming. She is likely to feel that her charm is gone and that the golden days of her womanhood are irrevocably past.

Yet the truth is that such fears and broodings are, to a large extent, without foundation. They are a hold-over from former days, when change of life was a merciless tyrant to so many women.

But today the tyrant's grip is broken. Medical science knows a great deal more about menopause (change of life) than in the days of our mothers. What is more important, medical science today can *do* a great deal more about it. That's why the doctor now can offer every woman both hope and help at this crucial time.

If you are approaching the age of the menopause (it commonly begins between the ages of 45 and 50) consult your doctor. If you have already noted anything which might mean such a change is in progress by all means see him without delay.

Your doctor can materially alleviate physical distress; can give comfort to the body and peace to the mind through the entire period of transition and adjustment. He can show you how the years that follow the menopause frequently can be the happiest, most useful, and most rewarding years of a woman's life.

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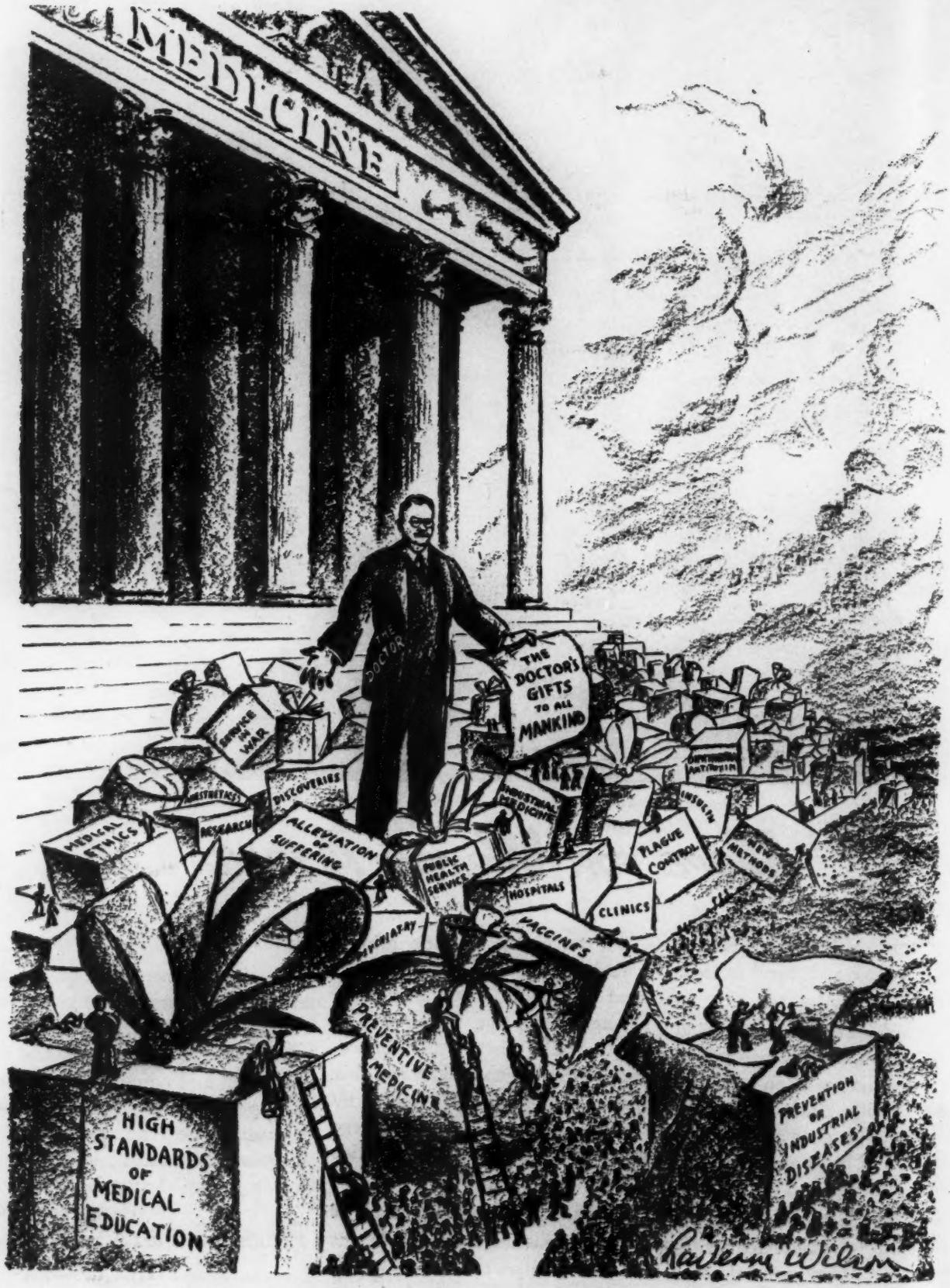
SEE YOUR DOCTOR



THE PERPETUAL GIVER

Good Will to Men on Christmas Day and Every Day

EDITORIAL

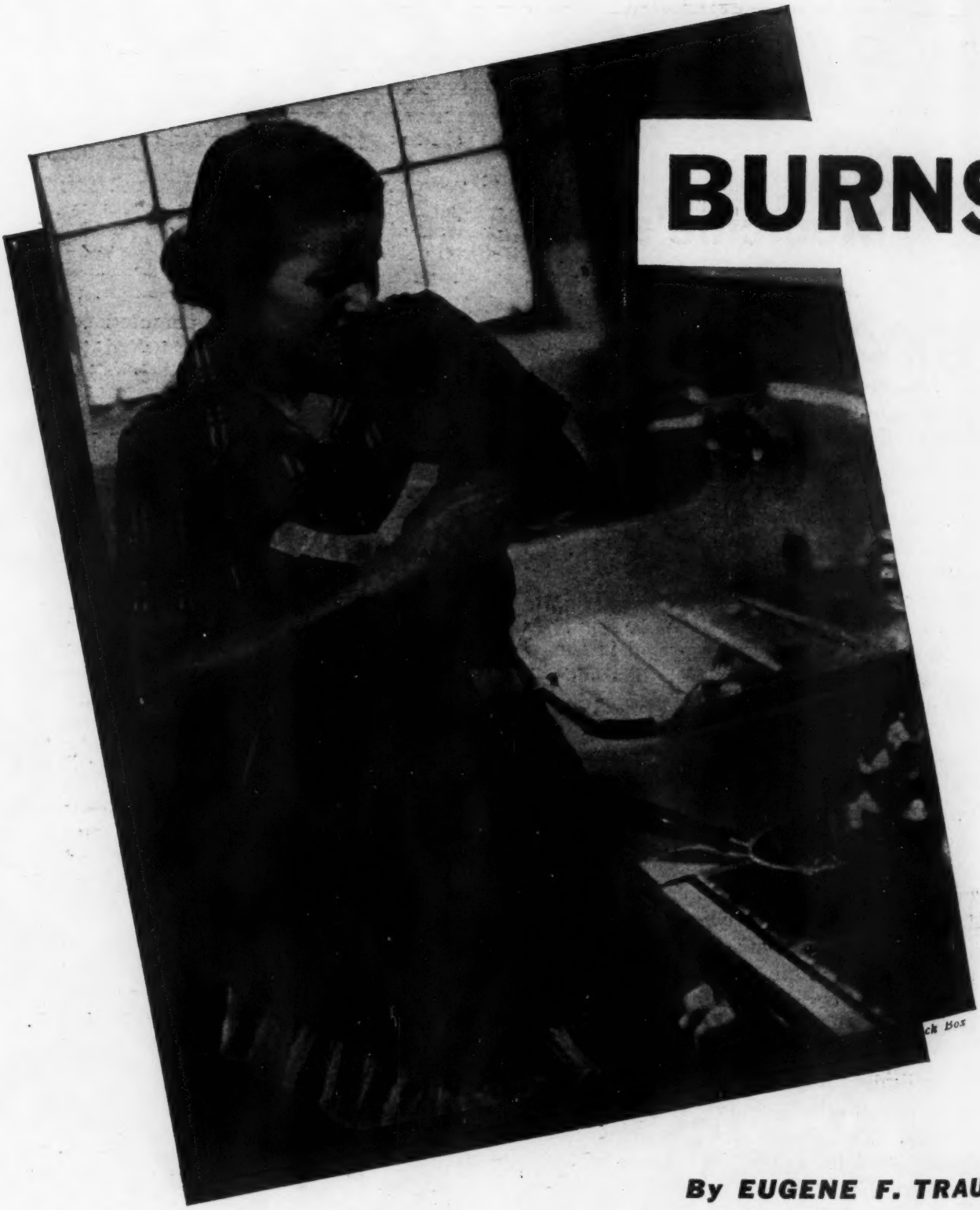
Medicine's Gifts to Mankind

FROM its very beginnings the science of medicine has contributed vastly to the happiness of human beings. Even man of prehistoric days trephined the skull to relieve pains coming from pressure within. Yet these simple efforts were only the beginning of a process which was eventually to free mankind from the greatest tyrant that he has ever known, the tyrant of fear; and of all fears which disturb mankind the greatest is the fear of pain, suffering, disease and death. In an earlier period in the history of man, hundreds of thousands of human beings were destroyed by disease and by great plagues which used to sweep across the world. Today the people who live in civilized communities no longer fear smallpox, typhoid, yellow fever, bubonic and pneumonic plague, trypanosomiasis, cholera, leprosy or even syphilis. One by one the causes of the infectious diseases have been discovered, the means of transmission have become known, and these diseases have been eliminated or at least brought under control.

Before the time of Pasteur, surgery was limited to just a few simple operative procedures, including amputation of limbs. There were but few physicians competent to invade the interior of the human body. Then came our understanding of the germ causation of disease, and the demonstration by the famous Lister of the possibility of eliminating infection. Before our knowledge of the germ causation of disease and before the introduction of antiseptics and of aseptic methods, surgery was viewed with horror by every person confronted with the necessity for an operation. Forty-five per cent of amputations resulted fatally. Hospitals smelled to high heaven with the pus, the decay and the inflammations of infected wounds. Today there is no portion of the human body which the surgeon does not invade; lives are greatly prolonged; the operating room is a clean, white refuge for those who require its service.

Life expectancy of man at birth in the United States has moved up from an earlier 35 years to almost 61 years, and it is conceivable, with suitable application of what medicine now knows in relation to hygiene and in relation to the control of the degenerative diseases, that life expectancy may be advanced an additional five years. The physician has cooperated with health departments, with authorities in schools and with newspapers, radio networks and other means of public information to spread widely the knowledge of the nature of disease and of the methods of prevention. Thus the physician is perhaps the only worker in all the world who spends most of his time destroying the conditions by which he has gained his livelihood. Vast numbers of people now share the knowledge of medicine, which is no longer held a mystery. The frontiers of medicine are constantly changing. Medicine is a living, vital science, constantly moving to attack new problems that arise. It has given vastly of itself to mankind in the past, and it stands ready to give more, if it can, in the future. It makes to mankind no promise of immortality or even of eternal youth; but it does offer to those who are ready to receive its gifts, increasing years of usefulness.

BURNS



By EUGENE F. TRAUB

DESPITE the more dangerous industrial and occupational hazards engaged in by men, women suffer more burns than men do, and children more than adults, according to statistical data. About 45 per cent of the deaths from burns occur from birth through the fifth year of childhood. The frequency of burns in children can be attributed to a great extent to the carelessness of those responsible for the welfare of the child—parents, nurses and servants—as well as to the curiosity and adventuresome spirit of the child himself. Statistics gathered by the Metropolitan Life Insurance Company for a twenty year period show that three out of five deaths from burns are of women and girls. From the fourth to the thirty-

fifth year there is a relatively high death rate in females, more than twice as many girls as boys dying of this cause between the ages of 5 and 9 years. After 35, during the period of active engagement of men in industry and hazardous occupations, there is a higher death rate from burns in males. In late life the rate is again higher in women.

Burns in women usually occur at home and as a rule arise during the course of their household duties. Women's mode of dress is an important factor in increasing the hazard of burns. Burns are more common in winter than in summer.

The frequency of fatalities from burns in civil life is generally underestimated, despite the fact that burns stand fourth in numerical importance among the causes of accidental death, being outranked only by automobile fatalities, falls and drownings. In industry the rate for incapacitation from burns varies from 0.5 to 1 per cent. Of patients admitted to hospitals for treatment of severe burns, from 5 to 30 per cent die of their injuries.

Burns may be classified as those caused by moist heat (scalds) and those caused by dry heat. According to the degree of damage to the skin and tissues, they are divided into first, second and third degree burns. First degree burns are those in which there is erythema or redness of the skin affected. Second degree burns are those in which there is redness and the formation of vesicles or blisters. Third degrees burns vary in severity but include all degrees of charring of the skin and deeper tissues. The results of burns vary according to a number of factors, the more important being the nature of the exciting agent (fluids, solid metals, greases and oils, explosions and so forth); the degree of temperature of the agent; the duration of contact with the agent and the susceptibility of the part of the body affected, the palms and soles, arms and legs having greater resistance than the abdomen, face and neck, for example, and the general condition of the patient (sex, age and state of health).

In general, the following observations are found to be true: Scalds are more serious, area for area and depth for depth, than burns due to dry heat and are responsible for the worst sloughs or destruction of tissues. Extensive powder burns are the most painful. With rare exceptions, electrical burns are the slowest to heal. The younger the patient, the more serious the symptoms and the higher the mortality. Children withstand burns poorly. Elderly people are more apt to succumb to the exhaustion which accompanies slow difficult healing. Burns are more serious in women than in men. Any debilitating disease, such as tuberculosis, kidney disease, chronic alcoholism and malnutrition, lowers the patient's resistance. The depth of the burn is relatively not as important as the extent of skin surface involved. The outcome is more unfavorable, the greater the area of skin affected. The location of the burn affects the outcome, for it is noted that burns of the extremities and back are less serious than burns of less degree and extent on the face, chest and abdomen. Burns occur more easily and are more severe when there is an abnormal condition of sensation, as in acute alcoholism, paralyses and comas and under general anesthesia. This is due to the fact that such tissues are devitalized or the sensation of pain is lowered or absent, and the patient is unaware of being burned.

The causes of burns are innumerable. Since so many women and children are burned in the home, it is advisable to mention a few of the almost infinite number of hazards, all of them preventable. Moreover, the prevention of burns is the first step in the problem of treatment.

Many youngsters are scalded by the spilling of hot fluids. Often a pan of hot liquid is placed on a stove, with the handle projecting beyond the edge. This may be caught in a fold of the housewife's dress or grasped by the curious fingers of the child. Lifting hot pans and skillets without protecting the hands causes severe burns of the palms and fingers. Spattering of hot grease in cooking causes burns of the hands, face and eyes. Such objects as hot stoves, heaters and steam pipes are commonly recognized by the adult as objects to be avoided, but often the child is not taught this lesson soon enough.

The familiar fire, started by a smoker who falls asleep in bed with a lighted cigaret, is probably not less common, because the well known dangers are ignored. Lighted cigaret stubs thrown into waste baskets cause many fires.

The hazard of using cleaning fluids that are inflammable is common knowledge but not sufficiently heeded by the housewife. Even if there is no open flame near, the inflammable fluid may be ignited by a spark produced by the friction of rubbing the materials, especially silk, causing a bad explosion.

Candles, bad Christmas tree lighting fixtures and short circuits in defective electric wiring and lamp cords are not infrequent causes of trouble. A child may suffer severe burns of the tongue and lips by putting the end of an open plug or extension cord in his mouth. Serious burns may be caused by the improper or careless use of hot water bottles or electric heating pads. A child may burn his ear if he falls asleep on a hot water bottle, which is so commonly employed to relieve an earache.

Toy balloons filled with hydrogen gas may explode at contact with a spark from a fire or a cigaret. The cheaper films made of nitrate for toy movie projectors are inflammable.

Celluloid toys may explode when handled by a child near an open fire or gas heater. Finally, it must always be remembered that children like to play with matches. They should never be left alone in a house under any circumstances because in their explorations they may play with matches or turn on the jets of the gas stove.

Burns from chemicals are less common in the home than in industries which use chemicals. However, they are hazards to be considered if the medicine cabinet contains strong solutions of acids, such as carbolic acid or oxalic acid, or caustic alkalis, as caustic soda and lime. Ammonia fumes cause burns of the face and lips and mucous membranes of the nose and mouth. Strong solutions of tincture of iodine may cause burns.

In the beauty parlor, women are subjected to the risk of superficial or more serious burns. Such accidents may occur from carelessly managed permanent wave machines, curling irons, hair dyes, which may cause a severe dermatitis rather than a burn, and so on. Celluloid combs when used for holding "water waves" in place may ignite under the heat of a drying machine and cause a severe burn.

Burns occur as a result of gasoline explosions in gas stations, automobiles and boats or because of fires started by defective wiring and insulation.

Most common in occurrence is the sunburn so frequently experienced during the summer months. This varies from a first degree burn with redness to a severe second degree burn with blistering and general symptoms. In this category are also found burns from ultraviolet ray lamps indiscriminately used in the home. Burns occur from exposure to wind and the reflection of the sun's rays on snow. Dry ice, used especially in packing ice cream, may cause unpleasant burns if handled without precautions.

Frostbites really constitute a subvariety of burns and so must be considered briefly. They have been treated from time immemorial by rubbing the affected parts with snow. Stefansson, the eminent arctic explorer, does not recommend this common practice of rubbing with ice water or snow, meanwhile keeping the patient in a cold room. He employs gentle friction with the dry palm, the hand being warmed against the rescuer's breast. Internally, the victim is given warm, nutritious drinks, but no alcohol.

The treatment of burns is twofold: the immediate or first aid care of the patient and the subsequent treatment of the burn proper as well as the patient's general condition and complications.

In burns of minor degree there are a number of applications which are suitable to promote healing as well as to alleviate pain and discomfort. Some of these remedies are available in every home. Some are better than others for the purpose. A few are harmful. In a first degree burn the immediate application of cold water or ice has been recommended from the time of the ancient Greeks and is still in use today. It is of value only immediately after the injury to mitigate the pain but is harmful in the later treatment. The main purpose of treatment is the relief of pain by protective measures of some sort. Creams or ointments may achieve this result; but some authorities believe they are harmful, even for small burns of minor degree, because they may cause softening and removal of the protective layer of skin. A dusting powder composed of a mixture of boric acid and starch or a wet dressing of a thick paste of sodium bicarbonate will give the desired protection. Strong tea, applied as a wet pack, or a warm poultice of tea leaves may also be used.

In second degree burns, the question of whether or not to open the blisters has often been debated. Most physicians advocate leaving the blisters intact, especially if small, as the contents of the blister are sterile and serve to protect the tissues underneath. If the blisters rupture of their own accord, however, healing is not so good as when they are opened antiseptically by a physician. Sterile dressings are essential whenever the skin surface is exposed. Second degree burns should always be treated by a physician at once if possible; if not, the best first aid is tea.

When the burn is more extensive or third degree, treatment is directed not only to the relief of the burned area but toward the prevention of shock, the subsequent complications in the internal organs, secondary toxemia, exhaustion and infection. These are emergency cases, and medical care should be obtained immediately. Moreover, it is best that the physician should make the first local application. As the initial application to the burned area is of the greatest importance as far as the final outcome of the case is concerned, the inexperienced person must learn what to apply or, more important, what not to apply in these cases, should no doctor be available. The essential thing in the first aid treatment is to maintain the strength of the patient, put him in a comfortable position, keep his body temperature up to normal by warm blankets, alleviate pain which arises from exposure to cool air by the same procedures and give him fluids by mouth —but never alcohol. The application of any creams, oils, greases or powders in these cases of severe burn is absolutely to be avoided. A sterile solution of tannic acid, 2.5 to 5 per cent, sprayed over the burned area, followed by an application of 10 per cent silver nitrate on a cotton applicator probably constitutes the treatment of choice at the present time. Emergency treatment locally should *(Continued on page 1152)*

A TRIP to any modern toy shop or to the toy section of the up-to-date department store gives one the impression that toys are an outgrowth of the machine age. While it is undoubtedly true that the various playthings on the twentieth century market are the result of labors of thousands of inventors and that they are designed to stimulate childhood appetites for recreation, historically toys are older than civilization itself. To the child they are more than mere playthings. They are instruments of self education and implements for mental expression. The play life of the child is indeed one of the most interesting phases of study of the human race. Analysis of the various games in which children of different ages indulge constitutes a study in the development of civilization with man as the central figure. My object, however, is not to discuss social evolution but rather to point out certain principles in connection with proper use of toys and the part they play in the development of the child. Since toys are important tools in the child's growth, some definite rules pertaining to their use may be discussed with benefit to both the giver and the recipient of gifts.

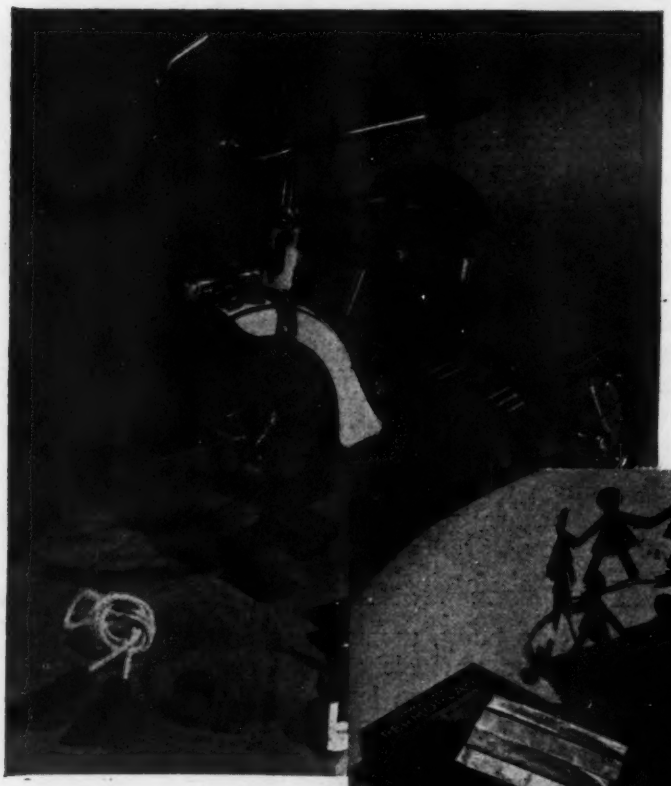
A toy is useful when it fulfils two main requirements: It must be entertaining and educational. To be entertaining it must hold the youngster's interest. Anything that stimulates his curiosity will also engage his interest. Furthermore, any object that will give the child the opportunity to exercise his skills will add to its value and its utility. The educational feature, while important, is attained indirectly and is, as a rule, the result of the fulfilment of the sustained interest. It is the natural result of expression.

Before entering into a detailed discussion of these criteria it is necessary to examine a few of the requisites that apply to all toys without regard to cost or usefulness. Since young children place most accessible objects in their mouths, safety deserves consideration.

Generally speaking the younger the child, the larger should be the toy. It is at times surprising what children are capable of swallowing. Several years ago a 2 year old youngster was brought to a clinic for treatment of a cough of several months' duration. Asked about the possibility that the child may have swallowed a foreign body, the mother protested that the boy never partook of any solid foods. "He cannot even chew, let alone swallow anything but liquids." An x-ray examination, however, revealed an "iron soldier" in the lung. This soldier probably deserted his toymates about Christmas time. He was discovered in the lung of his host the following June. There is hardly a bronchoscopist who, if he saved all his extractions, could not furnish a moderate sized toy

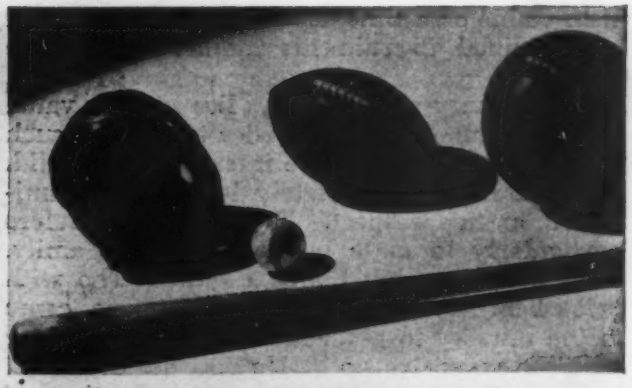
TOYS FOR TINY CHILDREN SHOULD BE WASHABLE, SINCE THEY ARE USUALLY FOUND IN ONE OF TWO PLACES: ON THE FLOOR OR IN THEIR MOUTHS. FOR THIS REASON TOO THEY SHOULD NOT HAVE ANY SHARP EDGES.

EARLY PLAY IS MOSTLY INDIVIDUAL, THE CHILD BEING CAPABLE OF AMUSING HIMSELF. THEN GRADUALLY THE IMAGINATION UNFOLDS; BOTH SEXES BEGIN TO APPRECIATE FORM, SYMMETRY AND RHYTHM.



BETWEEN THE AGES OF FOUR AND TEN THE CHILD'S INTEREST CENTERS ON THINGS THAT CAN BE MOVED ABOUT IN HIS OUTDOOR PLAY. TRICYCLES, JUMPING ROPES, SKATES AND TOPS WILL AFFORD HIM UNLIMITED OPPORTUNITIES TO USE UP HIS ENERGY. INDOORS HE BRINGS HIS IMAGINATION INTO PLAY IN MOLDING CLAY FIGURES AND USING COLOR.

Toys, courtesy Marshall Field & Co.



Photos, Stephen Deutch

IN INCLEMENT WEATHER THE BOY FROM SEVEN TO TEN WILL RUN HIS TRAIN OR ENGAGE IN THE MORE ELABORATE MANUAL TASKS; THESE MAY LEAD TO A REAL ACCOMPLISHMENT. AT THIS AGE, PLAY BECOMES COMPETITIVE, AND BETWEEN TEN AND THIRTEEN, SKILLED COMPETITIONS ARE DOMINANT.

shop from his collections of objects recovered from the stomachs and lungs of children.

In addition to size there is the factor of shape. This is particularly important in the case of small children. Toys with rough and sharp edges should be avoided. One of the most tragic cases that comes to my mind is that of an only child who at the age of 16 months was presented with a balloon suspended from a pointed stick. Scarcely an hour later the child was taken to the hospital for treatment. In his enthusiasm over the toy he ran and fell against the handle of the balloon. He has worn an artificial eye for the past five years.

Then there is the factor of cleanliness. Things that are in frequent use collect dirt. Many of the playthings now sold are washable. It is a good plan to accustom the youngster to habits of cleanliness at an early age. There is no better avenue for training along this line than through objects which the child considers his own possessions. Aside from its educational value a washable toy is naturally more hygienic than is one from which dust and bacteria cannot be removed with soap and water.

A gift when once given should be considered the property of the recipient, and full responsibility therefor should be relegated to its new owner. Unless the child shows definite tendencies toward destructiveness, the treatment that the object ultimately undergoes is to be determined by the child himself. It must be remembered that experience cannot be taught. It is usually acquired following many mistakes, and any effort to divert the child from the experimental route is merely an invitation to unnecessary problems that are more costly than the innocent experimental processes which the child must himself undertake in order to learn what is good and what is bad, what is right and what is wrong.

Several years ago a boy who was said to be terribly destructive came to my attention. The little fellow was 6 years old. He had the habit of breaking everything within his reach. His last offense consisted of taking apart his mother's watch. The interesting part of the story lay in the fact that the boy was well supplied with things of his own which he handled with adequate respect. Further inquiry disclosed that several days previously Tommy was given a watch for his birthday. The warning that accompanied the gift was that the boy would have every bone in his body broken if he should in any way molest this watch. Tommy was resentful because he was punished while the coveted watch was practically untouched. It is rather difficult to justify such a procedure on the part of the parents, especially when one recalls that curiosity is one of the urgent drives of childhood. It is logical to assume that had this boy been allowed to investigate the mecha-

nism of his own timepiece he would have been less inclined to ruin his mother's expensive watch.

The primary object of toys lies in their value as entertainment, and in order to achieve such value a toy must hold the interest of the child. Many parents are completely devoid of discrimination in this respect. This statement refers particularly to male members of the family. Only the other day I met a father, who with pride befitting the advent of a first-born, came to the nursery to greet his 2 day old daughter with an expensive doll. He was quite put out because the baby showed no indication of what could even remotely be interpreted as enthusiasm.

From birth until the end of the second or third month, the infant shows practically no interest in anything but his bodily needs. From the third to approximately the eighteenth month he utilizes three senses: sight, hearing and feeling. Any toy designed for entertainment at this time must be limited in appeal to these senses. Bright objects, rattles, rubber animals and balls are appropriate, provided the safety elements are observed. Play is mostly individual, the child being capable of his own amusement.

The herd instinct comes on gradually. At about 2 years of age the youngster begins to show definite interest in playmates. Play between the age of 18 months and 4 years is largely that including motion, and any toy therefore to be of greatest value must afford that type of activity. Swings, small buggies, wheelbarrows and trucks are good examples of the type of toys capable of engaging the child's interest. At this time also the imitative and imaginative traits begin to unfold. Both sexes begin to appreciate form, symmetry and rhythm. The little girl at the age of 3 or 4 years is ready to appreciate dolls, and her brother of corresponding age is more likely to show an interest in toy soldiers or similar objects.

There is hardly any form of play during childhood in which motion does not play a prominent or even a dominant part. Any article designed for movement is a welcome gift to a youngster between the ages of 4 and 10 years. Bicycles, tricycles, jumping jacks, tops, engines, trains, skates and a jumping rope are objects which the youngster enjoys and at the same time uses as an outlet for his energy.

At this age the creative element also plays an important role. Imagination brings forth curiosity. At about the age of 5 years the child pushes and drags pebbles and bottle caps on his truck, dumps these in the back yard, loads the vehicle with dirt and digs a cave a few yards away to unload the cargo. Rakes and shovels and other garden tools are necessary for construction and tearing down of these tasks. The girl at this time plays in the sand pile; and finding herself tired of the innumerable fillings and emptyings of the small bucket, she picks up the watering pot and attends to the flowers, real or imaginary.

In inclement weather the 6 year old boy will run his train or shoot his soldiers. His sister will probably be engaged in cutting pictures out of a book and pasting these proudly in another book. She will enjoy the fairy stories read to her, and both brother and sister will thrill over the adventures of dozens of imaginary heroes. Books therefore have a definite place in the life of the child.

From 7 to 10 years, play assumes a competitive form. Balls, seesaws, swings, jumping ropes and roller skates are now the main preoccupation. Along with this there is also the aim toward more elaborate manual tasks. Carpenter tools and building material are utilized for constructing shacks, tents, dog-houses and caves, and curiosity now is spent on the study of magnets, magic lanterns, spy glasses, airplanes and other innumerable but interesting projects. The girl at this age is taking her dolls seriously, endowing them with social qualities. Names are distributed with utmost care, and the dolls' pretended "behavior" is sanctioned or condemned as the occasion dictates. Dramatic play is a prominent amusement for both sexes. Girls play house and store and school. Here the material called for consists of household furnishings, doll houses, doll buggies, books and anything that contributes to the integrity and completeness of a home in miniature form. The boys engage in more adventurous play, acting as soldiers, policemen, G-men or firemen. The implements for their games are too well known to require even mention here.

Between 10 and 13 years skilled competitions are the dominant means of play. All forms of athletic apparatus come into use. Baseball, skiing and kite flying are sports which bring into harmony many of the traits previously acquired and add further to the physical and social progress of the youngster. Tools are still an important item and are now used for building of larger structures with more elaborate contraptions. Girls, as a rule, find greater interest in domestic entertainment, such as basketry, bead work, knitting and sewing.

I have attempted here to present a general outline of the play life of the child as a means of understanding the nature of the implements utilized in his activities at different age levels. It is believed that any selection made with this information in mind will be found useful, entertaining and educational. There are many thousands of specific toys on the market that are designed to fulfil these requirements. They are well constructed and moderately priced. In this connection it may be well to point out that expensive toys are not necessarily ideal toys. A good toy is one which holds the interest of the child and allows him to *(Continued on page 1137)*

By REGINA J. WOODY

A JOB WITH A FUTURE

WHEN boys and girls finish high school or college, they descend on unsuspecting employers and plunge head over heels into the present workless business world, demanding in shrill tones that they be given a job with a future. When they are asked what they do best, or what they would like to do, they answer blandly, "Anything." Pressed to be more explicit they usually decide that they can do "Everything." The only answer that could be worse, in the opinion of most busy executives, is possibly the truer and more original answer, "Nothing," which is, of course, what they really meant in the beginning.

Strangely enough, it is the young folks with the least ability who insist on a "future" in the jobs they demand. But what employer can promise a future? Business doesn't deal in intangibles or imponderables. The only person who dares really promise a glowing future to another person is a fortune teller. The reason is not far to seek. It is because the future of the job in question is entirely in the hands of the person on the job; and who knows who will make good, or why?

Yet, during the deepest days of the depression, there were boys and girls who made themselves good paying jobs out of the most commonplace and most unromantic materials. They were so interested in their leisure activities, in their hobbies or their toys that they became independent because they began to cash in on them in a business-like manner.

Give the average boy a few unusual tropical fish for a birthday present, and shortly he will let them languish in the window while his mother feeds them occasionally out of a sense of duty. Yet in this country there is one 15 year old boy, still in high school, who has such a flourishing business in tropical fish that he employs two men at full-time wages to look after them while he gets ready to graduate. A girl of 22, who will soon graduate from college, has paid all her own expenses, helped out at home and banked $2,000, all because she learned how to make better fudge cake, brownies and chocolate syrup than any one else in town could do. Her business started when her mother asked her to make a devil's food cake for the church fair when she was 14 years old. The cake was a success, and she got her first weekly order that night. From that time on, almost, she has been on her own. Initiative and business ability played a part in her success, but she succeeded because she actually made better cakes than most grown folks could. It wouldn't have caused a ripple if she had said that she "hoped some day she could make a wonderful cake." It's what you do, not what you hope to do, that counts in this world. Faith without works is still a weak and visionary faith.

Tropical fish, homemade chocolate cake! What was the "future" in those two things? With little effort any boy can become the possessor of a few fish; any girl can learn to bake a cake. But to do it better than it has ever been done before—ah, there is the rub! One has to study and work, and try again and again, and rise undaunted from failure and go on to success. There is no easy road to achievement; it is a long, tiresome, rocky road. That's what young America must learn. Despite all our labor saving devices, we have yet to find one guaranteed to take personal, physical effort out of finding a job.

To be a success on a job means that you must identify yourself with it. That means work. Every guidance clinic, every hobby club is run in an effort to show boys and girls how to fit themselves to their jobs when they get them. However, not yet is it explained that they ought

to be fitted for a job before they go after one. Once that is emphasized, they can stop rushing about applying for jobs where only experienced workers are employed and get themselves ready for the job they want to hold. It may not be as exciting, or as "high-hat," to learn a job at vocational school as it is to graduate with honors from the high school college course. But, if he wants a job, the graduate from the vocational school has one ready and waiting, while the poor youngster who can't afford college will either have to tramp the streets, take poorly paid jobs or pocket his pride and take a year or two at vocational school to learn a trade.

It is possible that by the very fervor of our efforts to help guide our young folk to jobs we have overstressed the difficulty and the necessity for a job with a future. The fear of not being a white-collar, high salaried person is one which is holding many young people from taking the average run-of-the-mill job. It is becoming more and more evident that the American passion for supercollossal success is frightening the younger generation—that, and the immensity of our preparations for their probably long and tiresome bouts with leisure. It is time that we realized that boys and girls are happy because they are busy. It doesn't work the other way around. Happiness and self fulfilment have to be worked toward by the person wanting them. Contentment can't be achieved by one person and given to another. The busier an executive is, the more certain he is to do a favor for another person. Most of us know better than to ask a favor of the lazy, unemployed idler. Somehow he never has time to get it done. Perhaps it is because where there is initiative, there is success; where there is no initiative, there is neither enterprise nor enthusiasm.

Until you have actually interviewed several hundred young people you would not believe that the average youngster not only doesn't know how to do anything but doesn't even know what he wants to do. Both groups are almost impossible to deal with, for business is busy and has no time to teach filing, bookkeeping or typewriting. One busy executive said that it would be easier to find a place for a tenor in a brokerage house than for a boy who bleats, "Anything." At least the tenor would know how to speak clearly and might be used to call out account names. So, even though you, as a parent, can't see any signs of genius in your child, do at least get him to make the most of his likes and dislikes, hobbies or pets. Any one of them may start him off on his first job. You can place an individual, but you can't place a jellyfish, in a paying job.

It may be that the men and women of 40 and 50 who carried on through the war are really a lot of old humbugs who prate that it is more fun to do the work than to succeed at it; but

there's no use denying the fact that unless you really love the job you're doing you won't do it particularly well, and certainly you won't stick to it days, nights and Sundays. The truth of the matter is that the man who loves his work always takes a busman's holiday, for there is never time enough to do everything he wants to do about his job while he is on it. No one who hasn't worked for it—not even the genius—has ever known the real thrill of accomplishment. It is one of the few things in this world that is really not for sale.

There is a future in almost every job, no matter how menial; but first the young people must get a start. Because of this their education should be made as carefully rounded, as practical and flexible as possible. In this way the quality of their work can be improved without impairing their desire for success. Any one who can do a number of things well has a feeling of well-being that is sure to show in his alert, contented bearing when he applies for work, no matter of what sort.

There are always jobs about. Pick up any newspaper that you will, and beside a paragraph about the recession you will find an advertisement of mink coats at $8,000. Look over the columns of fine print explaining relief costs, and in the same paper read that Carnegie Hall was sold out for Benny Goodman's concert and that about 3,000 persons, their money in their hands, were turned away. Jobs are scarce, of course, but except during the peak of wartime production they always have been scarce. Business and industry are doing their best right now to take up the slack between men and work; but they can't do it all. Young America must be willing to work hard for less money, and smile.

Looking for a job is an art. Discuss job hunting at home. Don't groan and moan and pull a long face. If there isn't room in one line of work, try a job in a related position. Read books and articles. See what you can think up that needs doing. Get a little initiative into this daily hunt. Young people must be taught how to hunt up, and apply for, unusual jobs. No use to send a boy of 17 to apply for a job at a factory where they are laying off men. Of course he'll be disappointed. Rather send him off in answer to an ad for a position in which boys are wanted. Get him off early, happy and alert. The best job hunter is the fellow who gets up early and is first at the gate.

If your boy hasn't any definite interests and would just as soon go into a department store as into the oil business, you might go over his hobbies with him. Does he like to work with his hands or his head? Does he read about breeding rabbits, or does he make jewelry? Does he carve soap models or read about exploring? Whatever he does, try to see how it fits into his life and if it might be related

to a job. There are a great many of the strangest kinds of jobs in this world, and if he seems to have unusual talent for anything, no matter how odd, read up on the subject, and see whether there might not be a lead to a paying job in it. Such peculiar jobs are not the ones which have streams of people standing in line to apply for them. Often they are open and waiting for just the right person.

The first job usually has to be found by some one else, for the average youth has little initiative and even less courage. But don't let him sit by the radio and wait for a job to come to him, even if he has asked several persons to help him find one. Good food, a good radio and a little pocket money are death to the job hunter. Why look for work which will merely spoil the even tenor of his days? There is no use in getting angry. The boy is still a child, but you must ease him out of the home. The best way is to insist that he get up and wash and present himself decently groomed at breakfast time; then carfare and out of the house. Warn him not to come back until he has applied for at least two jobs. A routine such as this will eventually get him a job whether or not he wants one and will at least keep him alert and interested in the subject.

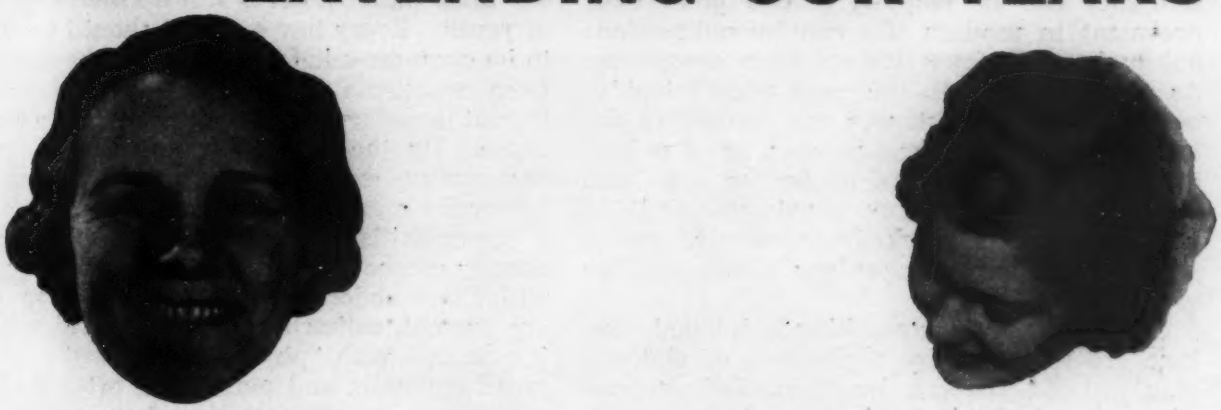
Almost the first thing you've got to get over to that boy of yours is that in order to get a job he must go out and look for one. Then tell him that once it is found he must take it and like it, no matter where it is or what it pays. One job is a stepping stone to another. Never let him think that once taken it must be kept. Keep in mind that he is going up; but do try to keep him from trying to start at the top. It might be a good idea to point out that when a boy is through high school he is a liability if he isn't either studying or working. Certainly he has no business sitting around while his parents pay rent, give him pocket money and feed him well. Adolescence, as a term, has covered a multitude of sins. Don't let it fool you into keeping your boy or girl tied too long to your apron strings.

Boys and girls of 17 and 18 who have never worked an hour in their lives delight in planning what they will do. Tell them to stop looking forward and start looking backward. They can't tell the world what they want to do; the world wants to know what they have done. The past year's school work is no criterion of success in another field; it may not even be a measure of that person's capacities, but it is a better measure of his skill than a year of idleness and the statement that he wants a job where there is opportunity for real advancement! To advance, one must start going somewhere. The child who really plans to succeed can be helped quite a lot, but he must get under way in his business life by his own effort.

This is where mothers and fathers can do more than most vocational clinics, for it is the atmosphere of the home that is too often at fault. When mothers and fathers appreciate that their attitude toward their children, their children's talents and their children's futures is just as important as the right food, warm clothes and good schools, before those children go job hunting, then there will be a tremendous change in the youth who go out to look for jobs. Gone will be the subdued, depressed, nervous children of the depression. For where there is faith, confidence and initiative in the home, the spirit of failure is conspicuously absent. When the whole family believes solidly in the ability of one of their number that person is going to get a good job just because he knows he's worth while, and his job will have a future because he's going to do it so well that some one will notice him and advance him or hire him away from where he started. It is really quite true, that old adage that "you can't keep a good man down."

Mothers and fathers can stop their children's fear of failure, if they will get behind their children and bolster up their confidence in themselves. School vocational clinics and hobby clubs can help a boy or girl a great deal, but the whole family can help even more at home. Your growing children must understand that their future success is within themselves. They are the captains of their souls. No one, not even the most doting mother, can give success to her favorite child. Money can't buy it; pull can't get it for him. If you, as parents, don't get this important news over to him, the chances are that he'll wake up a very disappointed individual one day, only to find that the "future" on which he staked his all, is still behind him.

EXTENDING OUR YEARS



Death's challenge is perennial, sharp. This program to defeat it is simple, effective. Its fundamentals and its reward are presented

By WILLIAM R. P. EMERSON

DEATH FROM OLD AGE is so infrequent as to be almost a medical phenomenon. Usually the life processes collapse prematurely under the extra weight laid on them by preventable disease. The fact that human life, on the average, has been prolonged twenty years during the past century is due almost entirely to the reduction of infant and child mortality. After 35, life has not been extended a single year in the last two generations. Between 50 and 70, life expectancy is not so great as it was a century ago, despite the brilliant achievements of medicine and surgery. What sinister forces, then, are threatening our lives with premature extinction? More important, what can we do to check them?

The nine principal causes of death in the United States are, in order: heart disease, cancer, apoplexy, pneumonia, accidents, nephritis (kidney trouble), tuberculosis, diabetes and appendicitis. The striking fact is that death from all these causes can be delayed for five to twenty years and in some cases prevented entirely!

The first positive step in circumventing death is a thorough physical examination. Many ailments—diabetes and kidney trouble, for example—can exist for years without obvious symptoms. Even valvular heart trouble can be present throughout life without a patient's being conscious of it until the fatal attack occurs. Every one *knows* that presenting oneself to a doctor for an annual overhauling is the best insurance against physical disaster. But how few act on this knowledge! In a large group of men in comfortable circumstances, I recently found that 20 per cent had never had a complete physical examination, and 42 per cent had had none for five years. Failure to have frequent physical check-ups, beginning with childhood, is reckless neglect.

By detecting the first signs of deterioration in our organs these periodic examinations can forestall death. If, for example, a urinalysis shows too much sugar, the doctor may suspect that the patient is suffering from diabetes. Diet often controls this condition; in advanced cases, insulin enables the patient to live out his full span of active useful years. If the urine reveals

an excess of albumin and red blood cells, the kidneys are not functioning effectively. Such a condition, called Bright's disease, usually produces high blood pressure—always a danger signal to the examining doctor. The physician may also uncover focal infection of tonsils and sinuses and teeth harboring deadly strains of streptococcus, potent causes of heart trouble and arthritis. Early tissue changes in tuberculosis and cancer can be positively detected by the x-rays, thus paving the way for treatment which can defeat premature death.

The tempo of contemporary life places cruel burdens on the heart and circulatory system. Deaths from heart failure are nearly triple those of any other cause; if we include apoplexy—shock resulting from the explosion of terminal arteries in the brain—deaths from these combined causes are equal to all others! Yet this slaughter can be stopped if two great evils prevalent in modern life can be obliterated: habitual overfatigue and chronic overeating. As we increase both the pace and freight of our lives, toxic substances are formed in the body. To eliminate these poisons, an extra load of blood must be picked up by the heart and arteries. Blood pressure shoots up, and the whole machine is wracked unceasingly, until at last heart failure or apoplexy claims another victim.

Overfatigue and the resulting high blood pressure are remedied by a program of skilfully managed rest. Even a short period of complete nervous and physical relaxation before meals produces a marked decrease in this symptom. In seventy-eight such cases among policy holders and employees of the Aetna Life Insurance Company, blood pressure was reduced from 15 to 25 per cent by a program of rest before meals, plus a judicious diet.

Too much food not only lessens our efficiency but poisons us with the toxins of incomplete digestion. We store fat in great folds over the hips and abdomen; the fatter we get, the heavier the load that is placed on heart, arteries and kidneys. Death moves a pace nearer; after the age of 35, mortality increases 1 per cent for every pound of overweight! If you are overweight now, have your physician give you a suitable diet which will reduce your food intake sufficiently to allow you to lose 1 pound a week until you have attained the weight that is normal for you. Sensible reducing is the best possible life assurance.

Pneumonia is usually ushered in by a chill and a rapid rise in temperature. There is a cough and blood-streaked sputum; the face is flushed, and the diagnosis can often be made from simple inspection. Formerly there was a bitter struggle and a sharp crisis, during which the physician sat by helplessly, hoping that the patient's heart would pull him through. But within the past few years, serums have been developed that are so efficient for certain types that mortality has been markedly decreased. Therefore, it is of the utmost importance to secure a specimen of sputum within the first two or three days and take it to the laboratory, where in a few minutes it can be "typed" and serum can be given. In types I and II, mortality can be reduced 50 per cent if the serum is given in time.

Thirty years ago tuberculosis, then called the "great white plague," ranked first in the causes of death. Now it ranks seventh and promises to drop still lower. Its cure, according to Dr. Edward Livingston Trudeau, founder of the modern treatment for tuberculosis, is to "open the window, go to bed, and keep your nerve." Though the fight against this plague has resulted in one of the outstanding medical triumphs of our time, tuberculosis is still a killer, especially of youth. Every boy and girl should be taught to be open-air-minded and should be protected from overstrain in work or play. If an adolescent is underweight, there is always a serious cause. By the tuberculin test and the x-ray and sputum examinations, physicians can spot tuberculosis early and effect a cure.

Appendicitis, ninth on the list of killers, is usually preceded by mild attacks of indigestion, with sharp abdominal pain. If these symptoms are present, cathartics should be avoided; dosing oneself with "physics" may lead to a ruptured appendix and peritonitis, often fatal. If you have recurring attacks of abdominal pain without apparent cause, you should suspect that your appendix is affected; prompt surgical intervention is the only certain remedy.

There is no cure for cancer in its late stages. Our safeguard is in its early diagnosis and removal. This furnishes one more reason for a complete physical examination yearly and accentuates the importance of consulting a physician whenever anemia develops or a tumor or mass is found in any part of the body. Do not procrastinate until you show a marked loss of weight or a prominent growth. Regard with suspicion all surface lesions and nodular growths as well as any protracted constipation or gastric disturbance. Reporting these to your doctor may give him the clue he needs for prompt detection of early cancer. Surgery, x-rays and radium are the only recognized agents in the control of cancer; do not be fooled by quacks who tell you otherwise.

That leaves only accidents, fifth greatest killer of all. It has been demonstrated repeatedly that accidents—in the home, in the factory and on the highway—can be prevented by simple care, courtesy and foresight.

And there you have the nine chief reasons why we may expect to die younger than if we had lived a century ago. The tragedy is not that

these causes of death are unavoidable; it is our indifference to them. We all want to enjoy good health and live out our natural span. But what, in the name of folly, are we actually doing?

We are spending $500,000,000 yearly for "patent medicines" that do more harm than good; this is more than is paid for the services of all doctors put together. We consult our physician only when sick, sometimes too late for any hope of cure. Lastly, we have become the victims of an artificial mode of life that disregards the very fundamentals of health.

To prolong our lives and to maintain buoyant health while doing so, we must undertake a double program. For the young, we must extend a technic of infant care that has already prolonged life by ten years. We must weigh and measure growing boys and girls every month, keep them up to standard and investigate the causes which send them below these standards. For adult life, we must continue these physical examinations every year to prevent disease and maintain a plan of regular living that assures the essentials of health: open air, proper foods in amounts sufficient to maintain optimum weight, regular exercise and the prevention of overfatigue.

Death's challenge is perennial, sharp. Our program to defeat it is simple and effective. And the reward? Life itself!

THE FIRST POSITIVE STEP IN CIRCUMVENTING DEATH IS A THOROUGH PHYSICAL EXAMINATION. MANY AILMENTS CAN EXIST FOR YEARS WITHOUT OBVIOUS SYMPTOMS. BY DETECTING THE FIRST SIGNS OF DETERIORATION IN OUR ORGANS THESE PERIODIC EXAMINATIONS CAN FORESTALL DEATH.

Black Box

Mr. PICKWICK
and the Streamlined Christmas

By MARION DARTNELL

WHAT IF Mr. Pickwick could emerge from the greatcoat, shawls and comforters of the Muggleton coach and join us Sunday, December 25, bringing his codfish and oyster barrels with him! "Aha!" said Mr. Pickwick. "Aha!" said the fat boy. But what would he think of us on closer acquaintance?

Would our dyspeptic appetites grieve him? Would it dismay him to find us resorting to canapes and hors d'oeuvres to whet our feeble thirsts? Would he be disappointed with our streamlined Christmas dinner and the modest scale on which it is consumed?

Christmas to him was a feast of sheer abundance which brightened up the darkest and bleakest month of the year, a day of colossal appetites and gigantic thirsts, with "a five-and-twenty-mile walk to get rid of the effects of the wine," followed by more eating and drinking and dancing and story telling, and so to supper. The hearty old host of Dingley Dell would have compelled every man, woman and child about him, just as a guaranty of good fellowship, to eat more than was good for them. Darwin might easily have pointed out that Christmas in those days made for the survival of the fittest.

The Pickwickian tradition of Christmas feasting fell naturally into the rhythms of the rustic life of that day. Life in the dead of winter was rigorous and conducive to vigorous appetites. There was every reason why a generation of red-nosed countrymen, muffled to the ears against the cold, should devote Christmas day to a feast of Gargantuan eating and drinking.

But even in Mr. Pickwick's time the Christmas feast had declined from the sprawling surfeit of Old England. Measured by the heroic standards of the seventeenth century, the Pickwickian feast is insignificant. The substantial character of the Christmas dinner of this period is given by Aubrey, in a manuscript of the date 1678: "In Christmas Holidays, the tables were all spread from the first to the last; the sirloins of beef, the minced pies, the plum porridge, the capons, pullets, geese, and plum puddings, were all brought upon the board; every one ate heartily, and was welcome, which gave rise to the proverb, 'Merry in the hall when beards wag all.'" The gross eating and drinking of the period is reflected in another proverb originating at that time "O mortal man! is eating all you do at Christ-Tide?"

These two diametric proverbs arise from the fact that Christmas is a blending of two ancient traditions—an austere ecclesiastical tradition and a pagan tradition of feasting which was anything but austere. The story of Christmas-keeping was for many centuries a story of the constant warring of these two discordant traditions. To the ecclesiastical authorities, feasting on such a day was positively irreverant. But to the rude Saxons, midwinter was a time for bacchanalian feasting and shouting and gaming, and none of the early Christian fathers succeeded for long in suppressing these heathen doings. These two traditions are now harmoniously integrated. We go to church on Christmas morning, then home to Christmas turkey.

The Yule log, the holly and the ivy, heathen symbols once, share with the Christ Child the honors of the festal season. The pagan folk songs of drink and victuals sung with many variations down the centuries are joined to the church hymns of the Nativity, of the Incarnation, of the Epiphany. The boar's head, the wild boar, which was the traditional sacrifice to the pagan gods at Yuletide, still has a part to play in the truly English Christmas. "Decked with garlands gay" it is borne in, both at Cutler's Hall in London and at Oxford, with the bilingual musical accompaniment that ties the native folklore to that of the holy night:

> The boar's head in hand bear I,
> Bedecked with bay and rosemary;
> And I pray you, my masters, be merry,
> Quot estis in convivio
> Caput apri defero
> Reddens laudes Domino.

The whole story of the seventeenth century Christmas has never been better described than in this poem from Poor Robin's Almanack for 1695:

Now thrice welcome, Christmas,
Which brings us good cheer,
Minc'd pies and plum porridge,
Good Ale and strong beer;
With pig, goose, and capon,
The best that may be,
So well doth the weather
And our stomachs agree.
Observe how the Chimneys
Do smoke all about,
The cooks are providing
For dinner, no doubt.

Truly, each generation has had its own Christmas. Customs have changed. The beautiful Bethlehem story, which gives the day its ecclesiastical name and dress, has not changed. But all the rest has changed and never a more whirling kaleidoscope of change than during the dizzy century since Mr. Pickwick and his friends took the Muggleton coach to Dingley Dell.

Now, Christmas comes wrapped in Cellophane:

With trimmings blue, not red and green,
And chimneys few and far between
With trees that never felt an axe
But were contrived from tin or wax
And carols heard by radio
Instead of sung by waifs below.

An urban and sedentary generation has sprung up, and urban life knows no winter interlude. Appetites though still willing are less robust. A second helping of mince pie is almost more than urban digestion is able to stand.

But if the impression has been given that we no longer value good food on Christmas day, let it be corrected here and now. A well laden Christmas table is still held in high regard. As Christmas day approaches, the leaves of cookbooks are turned over by those who must plan and prepare the holiday feast. Time-honored recipes are brought forth. The men of the family brush up their knowledge of hot and spicy punches. For in recent years there has been a revival of the old English wassail bowl whose spicy potation lent such warmth and fragrant cheer to the Christmas eve party at Dingley Dell that Mr. Pickwick under the mistletoe gallantly kissed the old lady "in all courtesy and decorum."

The main dish of the Christmas dinner has run the gamut from the ancient boar's head and roast beef or ham to stuffed goose, swan, pheasant and at one time the regal peacock. But we in America accept readily and with few dissenting votes the turkey as the lordly peer of all other dishes. It is true that cranberry jelly can now be had from a can and that an entrée of oysters in brown sauce is no longer the luxury it once was; but the popular demand for these dishes does not wane.

As for the Yuletide dessert, there are many who still feel that Christmas would not be Christmas without a hot mince pie or plum pudding. These ancient delicacies have come a long way and taken on many refinements since they entered the culinary lists some hundreds of years ago as chopped meat pasty (sometimes baked in the form of a manger, with spices to symbolize the gifts of the Wise Men) and fruit and cereal pottage served as a thick liquid in a soup plate.

While the great Christmas dinner itself is not at the mercy of the fashion of the moment, it is now served in a modern setting. Popular, for example, is a heaven-blue cloth decorated with silver foil bells, or poinsettia-red china on woven mats of transparent Cellophane. Though decorations may be blue, not red and green, and electric bulbs have replaced candles on the Christmas evergreen, it is the same old feast deeply rooted in tradition. And if you lament the Christmases you have spent, remember that, whatever the change, the Christmas spirit is the same—just wait and see!

Letters to My Infant Son

Written to David by His Mother and Published for Those Who Like Babies

Dear David,

In that quiet hospital room when we first saw you, tiny but physically sound, we knew that you were to do for us many things which only a child can do for his parents. And immediately the obligation we had sensed for so long became real; immediately our love was kindled. For you, David, were what we had wondered about for so long. Anxiously we waited for the day when we were able to bring you home—home to the everyday environment in which you will grow and live.

And now you are 2 months old, and home would not be home without you. There's still a natural hush to the house out of respect to your sleeping hours, but gradually we are trying to adjust you to some of our ways. We still rush madly to keep your food schedule regular, but the whole household schedule is settling into a better routine. Like all parents, we thought we had everything planned; but oh, what new adjustments you made necessary here!

I suppose a baby's crying bothers most mothers; yet it is endurable when a mother knows her baby is crying because he's hungry, not because he's sick or uncomfortable. Bad habits of sleeping and eating soon result when parents yield to baby tears. Yet it is hard, sometimes, to follow the advice of good doctors and authoritative baby books.

Orange juice and cod liver oil have been added to your diet. You've become aware of people, and it is no longer difficult to coax a smile from you. Those first real smiles, thrilling to Mother and Dad, seem to tell us that you are content here. Already you've succeeded in raising your head and looking about a bit as though life were beginning to look very interesting.

We can almost watch you grow, changes are so rapid. At each weekly weighing, the scales prove you more robust. Some time when you are older, we shall explain how we plotted your weight curve on a chart, and we'll tell you how Mother and Dad took turns to draw the tiny line each week that marked your progress.

Would you like another letter when you are somewhat older? You would! All right.

Love,
MOTHER.

Dear David,

You are just 4 months old today, little fellow, and already a baby with a definite personality. A big word? Well, it is just another way of saying that you know what you want even though those wants are simple. But we expect you to be a real individual. We hope that we may be your guide through many years, all the while promoting in you the desire to develop any special traits which characterize you as an individual, as well as to instil an interest in the normal pursuits which build good citizenship, good neighbors and good homes.

But that is looking just a bit ahead. We are glad to have you begin to recognize familiar persons and surroundings and to laugh aloud. For a long time now you have played with your hands. More recently you have groped clumsily for your rattle and reached for small objects.

You have penetrated one of life's deep mysteries, my son, for you are beginning to eat with a spoon. I suppose I found it hard, too, at your age to know what to do with solid foods. If it is instinctive to suck milk, it simply must be a part of one's education to eat solids. We seem to get along somewhat better if I remember to sing a little nursery ballad—a distraction from our job that induces a more pleasant mood in both of us. Perhaps this difficulty will work out just as going to sleep at 6:30 finally became a habit. You do go to sleep nicely now instead of howling because you are put to bed alone in a dark room. You are exasperating at times, David, but I think we'll keep you!

Love,
MOTHER.

Dear David,

I see you have found a playmate! Young man, is this the first you've noticed little Nancy? It is time you became acquainted, for Nancy was born the same evening you were, and her parents are friends of yours.

The two of you sit up quite well at 6 months. It wouldn't have been fair of me, David, but I did so want to laugh at your brave attempts to keep your balance a few weeks ago.

It was during these moments of play on our large bed when you were learning to sit that I realized what an intensely real little companion had entered our home. I try to choose playtime with you just before a feeding, for, hungry baby that you are, four hours must seem a long time between meals.

The heat is terrific these summer days, and although you have two teeth almost cut, you are having no trouble except from tender gums. Food is no problem because your milk and vegetables are properly prepared and refrigerated, and you adhere to your diet more closely than most of us do. Perhaps the heat does not bother your sleep because napping is easy after the two-minute sponge baths Mother has made a ritual on hot days. You send up a series of happy squeals each time the tepid water touches your hot body.

So many persons say, "Wait until your baby is a year old." But there is nothing wrong with six-monthers, is there, fellow?

Love,
MOTHER.

Dear David,

I hope sometime, when you grow up, you shall have the fun of watching your 8 month old child learn to do things. Day after day you've pulled yourself to your feet, only to be baffled as to how to get down again; then one day you found the answer, and the problem was solved. Day after day you refused a cup of milk; then one day you suddenly found you liked to drink that way. Sometimes you seem to us so grown-up, Davy. Yet, even at your age, action can come quickly, once the thinking process is worked out. Too deep for you?

But one thing that is not too deep for you is that tubful of bath water, which each day offers greater opportunities for your antics and keeps me on the jump. For while you're busy splashing with your duck, your mother is kept busy ducking the splashes. To perpetuate these happy (for you) occasions, we took a snapshot just as a soapy shampoo framed your face.

Now that you are creeping and beginning to stand, the time has come to guard stairways, keep a harness on you in the buggy and pull up the side of your bed, if we are going to avoid some hard bumps. Honestly, I don't know yet how you toppled from the bath table to the floor the other day when I was only a foot away from you. We took you to the doctor, Davy, because Mother broke a collar bone in such a fall when she was a child.

We've been concerned for some time about safety pins but hope that the policy of closing them each time they are removed from the diaper, keeping them out of your reach and having about only those in use will give you no chance to get an open pin into your mouth.

It's time for diphtheria inoculation. A slight unpleasantness that avoids severe sickness and tale-telling after-effects might be a definition for you, little boy.

But you can take it, just as you did the whooping cough shots that came earlier. We shall have you vaccinated against smallpox, too, before you are much older. We sincerely believe that you have the right to these precautions.

You could do with a little less precaution, you say? But, Son, you won't run out on us now, will you?

Love,
MOTHER.

Dear David,

Goodness, you complicate things! It was simple for Mother and Dad to persist in habit formation when all that concerned us was your eating and sleeping. But now we are afraid we are overlooking something vital, and people will say when you are older, "There's David, I don't want you to play with him," or "I wish they'd keep their child at home; he's so destructive." Being a parent is far from simple, and while we wrinkle our brows in consideration of these problems, you go about your play blithely and unsuspectingly.

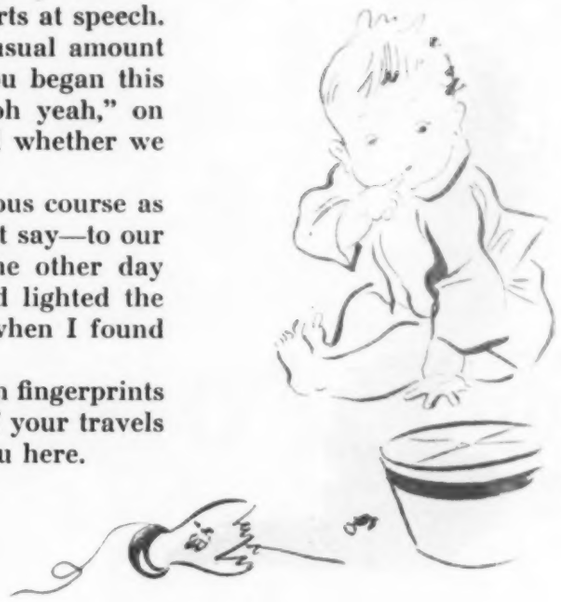
You drink your milk and fruit juices entirely from a cup now, so nipples and bottles are derelicts of your past. I miss holding you in my arms to feed you, but each change in the growing-up process seems to have its compensation, for now when I carry you from place to place, you grip your arm firmly about my neck in a companionable way.

"Sounding Off" might be the title for a 10 month picture of you, David. It is certainly typical of your recent efforts at speech. The word sounds "ma-ma" and "da-da" elicited the usual amount of adoring pleasure from your parents, but when you began this week to pronounce perfectly, "Oh yeah, oh yeah, oh yeah," on the slightest provocation, we laughed, then wondered whether we had to deal with slang expressions so soon.

And now there is a new problem. Your meandrous course as you creep about the house is rather upsetting—I might say—to our lamp connections. You weren't at all frightened the other day when you pulled down a lamp, found the chain and lighted the bulb. There you sat, emitting perplexed "ooooo's" when I found you with your newest plaything.

And as a "house detective" I would look to my own fingerprints if I were you. Mother finds unmistakable evidence of your travels all over the house. Just the same, it is fun having you here.

Love,
MOTHER.



Dear David,

One candle burned on your birthday cake today. For your parents it represents a year of memorable experiences, for we have seen you more than triple your birth weight and add about 9 inches to your height. You have grown from a warm, wiggly little bundle to an individual capable of using your bone and muscle structure in moving about. You express yourself more by words and gestures than by crying aloud. You eat solid foods as well as liquids. The panorama spread before our eyes is so complete that we realize that you have grown more, learned more and have formed more important habits in this one year than you will in any other year of your life.

At 11 months you took your first steps alone, and now, a month later, you are walking on steadier legs. You haven't yet discovered how to get to your feet without the aid of one of those large dependable objects you have located in various parts of the house, but everything cannot be accomplished in one short year. You are "helping Mother" by pulling off your shoes and stockings at bedtime and holding your cup alone to drink.

Yes, one candle burned on your birthday cake today. We hope that each additional candle, symbolizing another year of development, will create a farther spreading light in this big, boundless world.

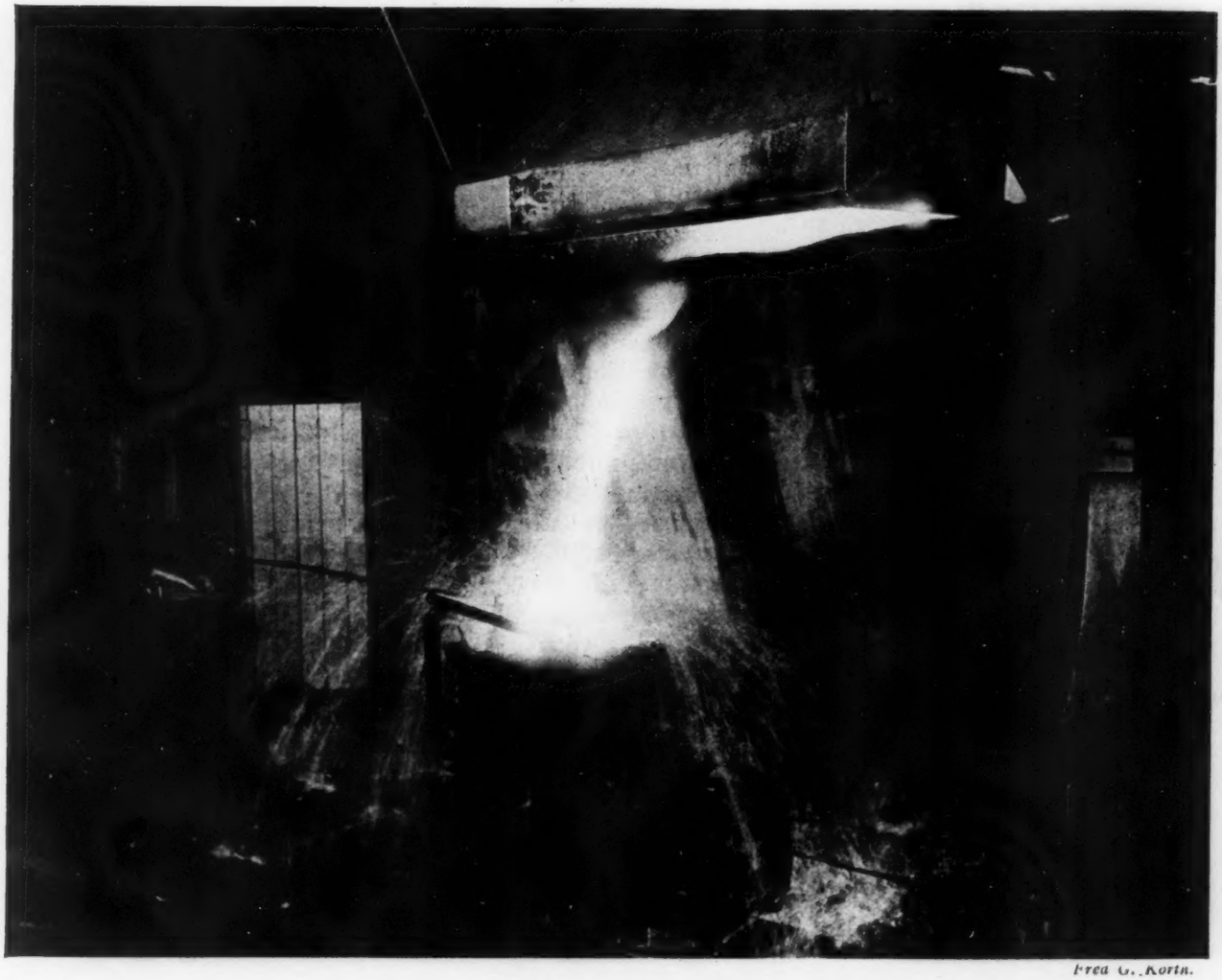
Are you suggesting that I am sentimental? No, David. It is the wish of every mother that her child will know good health, find personal happiness and adapt himself to his surroundings and to the times.

Why, it is the wish of the parents of all your 1 year old contemporaries: little Nancy, who cocks her head to one side and looks up coyly beneath long, black lashes; Mac, that stocky fellow, brown-eyed and brimming with mischief, and demure Irene with her short black curls.

And so, David, entrusted with the care of you for several years, it becomes our obligation, were it not our joy, to do all in our power to bring about these hopes for you.

Love,
MOTHER.

"What Kind of a Noise Annoys?"



Fred G. Korth.

NOISE TAKES A HEAVY AND OFTEN UNNECESSARY TOLL IN IMPAIRED HEALTH, HEARING AND EFFICIENCY. ITS COSTS IN INDUSTRY AFFECT BOTH THE WELL-BEING OF THE EMPLOYEE AND THE POCKETBOOK OF THE EMPLOYER.

IN A PROGRESS-DRIVEN world, in which speed and "nerves" run a perpetual race, the answer to that school-day riddle has come to be: "Any noise!" Any increase in noise becomes an additional burden and any decrease an additional boon. It comes therefore as welcome news that air conditioning, a fairly recent contribution to progress, brings with it the blessing of noise abatement.

The American Medical Association's Committee on Air Conditioning reports that air conditioning and noise prevention have a definite and valuable relation in controlled human environments. Whenever the windows of buildings are kept closed to exclude noise, air conditioning may become a practical necessity. Conversely, it follows that those occupants of buildings living in artificial atmospheres and

Adapted by Leola J. Harris from "Noise and Its Effect on Human Beings: Noise Control as a By-Product of Air Conditioning," an article by Carey P. McCord, Edwin E. Teal and William N. Witheridge, which appeared in The Journal of the American Medical Association.

thus not depending on open windows and doors will in some measure be protected against extraneous noises arising from traffic, nearby buildings or low flying aircraft.

The lives of many million persons throughout the country, especially of those in urban areas, are made less enjoyable, and frequently less healthful and profitable, by the insidiously harmful effects of noise. For such as these, life becomes indeed "full of sound and fury," but, contrary to Macbeth's experience, signifying *something*. That something takes the form of neuroses, loss of sleep, excessive fatigue, emotional disturbances, increased blood pressure, decreased working and mental efficiencies and that grave danger, noise deafness, a condition that is frequently a by-product of industrial employments. It is not unusual to find in groups of such workers below 30 years of age as many as 50 per cent with some degree of impaired hearing.

Auditory occupational diseases are serious in proportion to the length of time employees have worked at noisy occupations. Occupational deafness usually develops in the worker gradually, but in many cases of exposure to intense high frequencies the accrued damage is permanent.

Through experiment and testing, science has discovered how noise affects the health of the employee—and even how it affects the pocketbook of the employer. Now science can give the answer both in morbidity rates and in monetary rates; that is, in impairment of health and in cost in dollars and cents.

There is both practical and experimental evidence to substantiate its observations. From evidence both in human experience and in animal experimentation high-pitched tones appear to be more dangerous than tones of low pitch. The din in boiler works is considered by some investigators to be more injurious than the roaring in cotton spinning mills; the report of small caliber artillery and machine guns is likewise more injurious than the boom of heavy guns, unless the latter actually ruptures the membrane of the inner ear.

Experiments with animals have disclosed that hearing tends to be impaired more by vibrations transmitted through the bony structure of the body to the ear than by air-borne vibrations coming through the external ear. The effects of noises in the metal trades were studied in a Russian factory where hot steel bars were hammered into scythes. Ten white mice were placed in a cage in contact with the floor, and another group was placed in a cage suspended from the ceiling by a string. The two groups of mice were exposed to the same sound vibrations for eight hours each day. In twenty days destructive changes were noted in one of the mice from the cage on the floor, and within eight months the destruction had spread so that certain portions of the ganglion cells and nerve fibers in the inner ear had disappeared. Mice from the suspended cage, however, had not suffered any changes in their auditory apparatus. Another researcher subjected six guinea pigs to the continuous ringing of an electric bell suspended in their cage. Even after sixty days, no damage to the auditory apparatus was apparent on dissection. But when the vibrations were transmitted through the tin floor of the cage, the animals became emaciated rapidly, and two died after fourteen days. The others were killed, and characteristic degeneration was found in the inner ear.

Although bone conduction seems to be the active cause of ear degeneration, air conduction has likewise been found to be responsible for deafness and deterioration of the auditory apparatus. For example, when the right ear of a pigeon was exposed for about fourteen days to continuous tones of whistles, damage occurred in that ear; in another test, when an animal was subjected to a whistle tone after its left ear had been plugged, only the right labyrinth was affected. A similar effect was noted when animals were placed in a suspended section of an iron water pipe which was struck continuously by an automatic hammer to create sounds similar to those produced in boiler making. When one ear of the animal was closed, the destruction occurred only in the other ear, and when both ears were closed, apparently no damage was done to either ear.

But what of the effects of noise on human beings? In a survey on 1,040 workers in many different industries, the highest incidence of deafness for any age group was found in the noisiest industries. Of those workers who were exposed to noise for twenty-five years or more and who did not have a history of disease which might have been a causative factor, 26.9 per cent were deaf in some form, while in the group exposed to noise for less than one year, only 6 per cent appeared to have any impairment of hearing. Of the 246 persons found deaf, 91 had histories of infectious ear involvement, and the deafness of 155 was traceable to industrial causes.

Among the reports on research done in various trades are the following:

"What Kind of a Noise Annoys?"

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Of 75 smiths and machinists, 40 per cent were definitely hard of hearing, and only 39 per cent had normal hearing; of 40 coppersmiths, only 10 per cent had normal hearing.

One survey of 100 boilermakers disclosed normal hearing in only 9 per cent, while in another study of 31 boilermakers, none was found with normal hearing.

Among 1,011 weavers examined, a 24.3 per cent occurrence of deafness was found; of this, 6.7 per cent was nerve deafness, the type due to long exposure to noise; but no case of nerve deafness had occurred in weavers employed less than ten years. The number of cases increased with the years of employment, and this was especially evident among those who had worked twenty years or more.

It has been observed that many locomotive crewmen are partially deaf, and if this deafness progresses too far they are apt to be turned down after years of continuous work when they come up for annual examination. Most of this deafness has been attributed to bone-conducted vibrations. Again, research has disclosed startling facts. One survey showed that 45 per cent of these workers had impaired hearing; another that 5.8 per cent are affected within five years, and that after twenty years, 52.1 per cent have defective hearing. A 52 per cent incidence of occupational deafness has been reported in train dispatchers, and this occurs largely in their telephone ear—the left.

Very loud, sudden noises, explosions or excessive pressure changes are dangerous, particularly to the tympanic membrane, the bony structure of the middle ear. In a trade such as drop forging, where large pressure changes occur, it is found that many workmen acquire a thickening of the ear drum which prevents air-borne sounds from passing readily to the inner ear. So regularly are drop forge operators partially deaf that this impairment in some instances is regarded as their proof of occupational experience. Unless hearing is damaged, applicants claiming experience may not be employed.

Seventy-five soldiers who handled and fired antiaircraft guns were examined before firing was begun and reexamined one week after completion of the firing tests, which occupied a period of about two months. The examination disclosed a gradual diminution of auditory acuteness, caused by "a chronic catarrhal condition of the tympanum (the ear drum) with loss of elasticity of the drum, and fibrous adhesions."

Noisy work performed in a confined space is more harmful to the ears than if done in the open air. Hammering inside a boiler or firing in an enclosed rifle range is especially dangerous since resonance, reflection and reverberation accentuate the noise. On this account, work in much used vehicular or railway tunnels or subways is conducive to loss of hearing.

It is pointed out by the New York Noise Abatement Commission in its report on "City Noise" that policemen and taxi drivers are very often affected with deafness because of their continuous work in traffic. Dizziness too sometimes is a result of exposure to excessive noise or vibration. One British physician has expressed the belief that the opening of a new street carrying heavy traffic through a certain formerly quiet suburb caused the number of illnesses in that community to increase.

Aside from the physical disabilities of various degrees, types and durations which may result from noise, excessive or irritating noises have a measurable effect on the mental and manual output of work. How does noise affect working efficiency? What does this effect mean in dollars and cents on the industrial balance sheet?

Weavers using ear defenders in alternate weeks over a period of twenty-six weeks had an increased output of about 1 per cent when the defenders were worn. The defenders are minute devices of soft rubber which, when inserted in the ear, bar about 80 per cent of the usual disturbing noises. When the noise level was decreased about 50 per cent in apparent loudness, the output increased about 3 per cent. Experiments indicated that "even after years of work in a noisy environment, the worker does not become completely adapted or acclimated to noise but goes through the process of adaptation daily." In terms of personal efficiency, this was equivalent to an increase of about 7.5 per cent with subdued noise.

Investigators have found that interrupted loud mechanical noise is more disturbing than continuous noise of the same type; disturbance was not simply a function of loudness, for "soft" phonograph recordings proved almost as distracting, especially if the subject matter reproduced was "interesting." These investigators conclude that "noise in general tends to produce slight and readily recoverable diminution of efficiency."

In a German factory where experienced workers assembled temperature regulators, sixty imperfections were found in a group of eighty regulators. The assembly room was next to a boiler shop. When this work was performed in a quiet place, 110 units were assembled in the same time previously required for 80 units, and only seven imperfections were found. In a packing room equipped with a noisy ventilating fan, output was increased 12 per cent when the fan was turned off, in spite of the poorer ventilation which existed during that period.

In the office of a life insurance company the efficiency of piece work employees was studied before and after the offices were quieted. The noise level was reduced 14.5 per cent, and the average efficiency of *(Continued on page 1142)*

WISE MEN

By Edith Dean Thomas

Of old the Magi bore their infant King
Rich gifts with beauty and high portent fraught.
Sun-bright was Melchior's golden offering,
And sweet the frankincense Balthazar brought.
But youthful Gaspar with a heart humane,
Laid myrrh before his Lord in gold-tipped horn,
And in that symbol of surcease from pain,
The Great Physician's destiny was born.

Today these men of healing wisdom wear
No royal robes, nor do they seek a star;
Enough for them to ease man's load of care,
And kindle hope where'er the suffering are.
They bear no gift of frankincense or gold;
Theirs but the service true by myrrh foretold.

ON THE ALTAR OF SPEED

By ALFRED E. PARKER

A BOY CAME into my office one day with a downcast look. He was a dark-haired boy with snappy brown eyes and a pair of strong-muscled shoulders that were the envy of his friends.

"What's the matter, Jim?" I asked. "You look downhearted."

"I am," replied Jim, a look of pain rippling his forehead.

"What now?"

"High blood pressure," gasped Jim. "I'm finished. No more basketball for me—at least not for a long time."

"Isn't it fine that the high blood pressure was discovered so early in your life?" I commented.

"What do you mean?" exclaimed Jim, surprised.

"Mean? Just this, Jim. You are young. Take care of yourself, follow your physician's instructions, and there is plenty of possibility you will be all right again."

"That's just what the doctor said."

"Good. But tell me honestly, Jim—you have been overdoing in sports, haven't you?"

Jim did not answer the question for several seconds. During that interval of time I watched his tanned face. Presently the wrinkles in his forehead disappeared, and a smile took possession of his face.

"O.K. I'll tell you the truth," said Jim. "I've been a fool. I can see that now—just a plain fool over basketball. I seemed never to get enough of that game. Besides playing on the school team I played every chance I got, evenings, Saturdays and Sundays. I played too much. There is no question of it. It is a wonder my heart didn't burst, I guess."

"And what does the doctor say?" I asked.

"He says I must stop athletics for one year."

"Are you going to do it?"

Jim did not answer for a long time. Then his answer came without a faltering note in his voice, "Yes, I am. I don't want to be an invalid all my life."

The sequel to this part of Jim's story is that he did follow the doctor's advice, and a year later he was able to take part in athletics again in a modified form.

Two days after Jim came into my office, another boy came to see me. Bill was of a different build—tall and wiry. He was a blond with blue eyes, and he had a haughty bearing as he entered the office.

"The doc says I have high blood pressure," he began.

"And what are you going to do about it?"

"Me—oh, nothing much. I don't believe in all the advice the doctors peddle."

"You have a lot to learn, Bill," I said. "As for playing on the school basketball team, the regulations won't permit it until a physician pronounces your blood pressure normal. My advice to you, Bill, is to rest. Learn moderation. Bring that blood pressure down to normal by carrying out the doctor's instructions."

But Bill never did follow the doctor's instructions. It was a matter of lack of self control. Bill just could not keep his fingers off a basketball, and he played every chance he got. There came a day when Bill was really ill. He had to go to bed, and it is still a question whether or not Bill will ever learn to practice moderation.

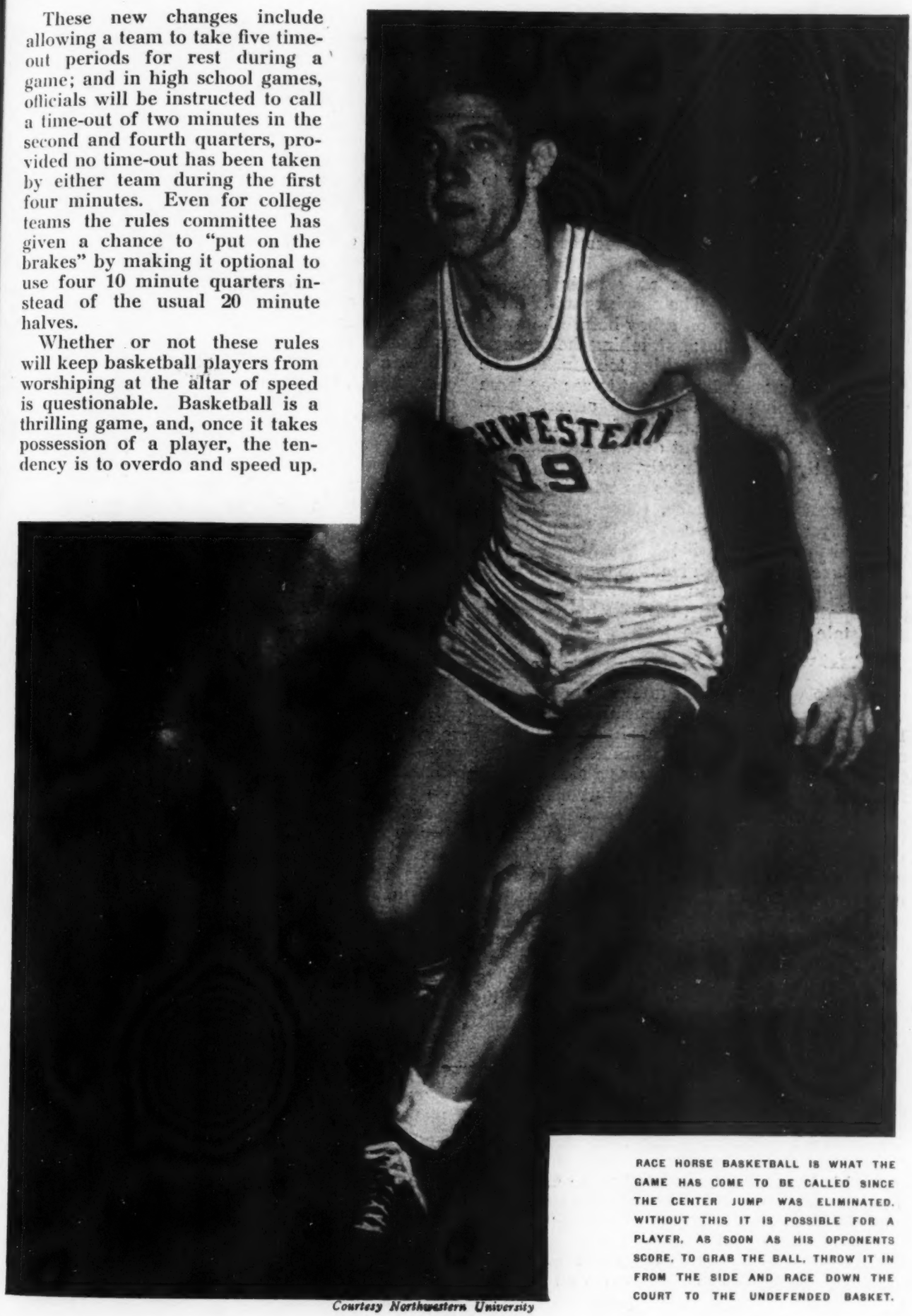
This brings me to an important problem: Too many boys these days are overdoing in athletics. Too often the doctor says, "My boy, your blood pressure is too high. You'll have to take it easy for a while."

And why? Why are big, fine looking boys being placed on the shelf, temporarily at least, with high blood pressure? A medical man will tell you that each case is a special problem. There may have been an illness in childhood; the boy may have had some kind of poisoning; a number of reasons may have contributed to the high blood pressure. The boy athlete of today is overdoing in athletics, and too much is being expected of him.

Take basketball for illustration: Even the coaches and officials who write the rules each year have become concerned with the criticism that has been aimed at the game of basketball. The criticism started when the rules committee agreed to eliminate the center jump. Immediately the game of basketball was speeded up. The pause, which preceded the tossing up of the ball at the center circle by the official, was eliminated. Without the center jump it was possible for a player, as soon as the opponents made a basket, to grab the ball and throw it in from out-of-bounds. Then the players raced down the court with the ball in an effort to make a basket before the opponents were able to set their defense. This type of fast play has come to be known as race horse basketball. It speeded up individual players, and the result has been an avalanche of criticism on the game of basketball generally and on the National Rules Committee in particular. That is why some new changes are to be found in the 1938-39 basketball rules.

These new changes include allowing a team to take five time-out periods for rest during a game; and in high school games, officials will be instructed to call a time-out of two minutes in the second and fourth quarters, provided no time-out has been taken by either team during the first four minutes. Even for college teams the rules committee has given a chance to "put on the brakes" by making it optional to use four 10 minute quarters instead of the usual 20 minute halves.

Whether or not these rules will keep basketball players from worshiping at the altar of speed is questionable. Basketball is a thrilling game, and, once it takes possession of a player, the tendency is to overdo and speed up.



Courtesy Northwestern University

RACE HORSE BASKETBALL IS WHAT THE GAME HAS COME TO BE CALLED SINCE THE CENTER JUMP WAS ELIMINATED. WITHOUT THIS IT IS POSSIBLE FOR A PLAYER, AS SOON AS HIS OPPONENTS SCORE, TO GRAB THE BALL, THROW IT IN FROM THE SIDE AND RACE DOWN THE COURT TO THE UNDEFENDED BASKET.

The new rules will help, of course, but there are several impelling factors to consider.

For instance, what is back of all this speeding up in athletics? For one thing, there exists all over this country an abnormal desire to win at any cost. This is due to extensive publicity glorifying sport. The boy who plays on a team looks on defeat as a disgrace. To play on a winning team, many boys have come to believe, is almost as important as life itself. This attitude is stimulated daily by innumerable articles in the press making heroes out of star athletes.

Then, too, the coaches play their part in speeding up athletes. The coach should be the one to put the brakes on a boy before he overindulges in competition; but, taking the coaches' point of view, isn't that asking too much? The adult rooters, particularly, want to see the team win. A winning team is good advertising—about as good as any chamber of commerce can concoct! This idea is put over to the coach, if not directly then indirectly, and the coach knows his contract depends on winning teams. That means, if necessary, more speed. The team players, track athletes and swimmers have to speed up, have to win!

Pressure on the coach leads to too much practice. And, with too much practice plus actual participation in contests, the athlete overexerts, goes stale and places a terrific strain on his vital organs.

Basketball is not the only sport requiring athletes to worship at the altar of speed. How about swimming? Remember the summer of 1932? The Japanese swimmers had just sprinted away with the swimming honors at the Olympic Games at Los Angeles. This was a real surprise for all those who had bragged about our "superathletes." But the followers of sport had hardly recovered from their surprise at the swimming prowess of the diminutive Japanese before another surprise confronted them: The Japanese swimmers were "doped with oxygen!"

This news caused a great stir among physicians, physiologists, psychologists, criminologists, chemical experts, athletic coaches and physical educators. And why shouldn't it? The Japanese had slipped something over on the other contestants. The Japanese really went at the business of speeding up their swimmers in a scientific manner.

The Japanese did something else too with their little experiment. They caused thinking people to question the value of highly competitive athletic contests, particularly if a human being is to be treated like an automaton and to have his lungs filled artificially like an oxygen tank, in an effort to increase the speed of his muscles.

Many people feel that the Japanese started something which should not be allowed to continue in the world of sport. After all a human being is a human being, and there is such a thing as worshiping too ardently at the altar of speed. If we must have faster and faster swimmers, why not build mechanical men? And when the terrific speed with which they are propelled through the water wrecks their insides, it would be a simple matter to replace their metallic vital organs.

Tennis is another sport that is speeding up players. Viewed by the uninformed as a sort of "sissy's" game, competitive tennis has come to be one of the most grueling sports on the calendar.

To begin with, competitive tennis is fast, the player being forced to move as quickly as a cat in a comparatively small area. Worse still, amateur tennis, as it is conducted today, requires a player, if he is not eliminated from competition, to play several matches a day, day after day. And there seems to be no let-up. Having finished one tournament, the amateur tennis player moves on to the next and goes through another series of grueling matches.

Then there is track. The track athlete, worshiping at the altar of speed, offers this prayer before a meet: "Help me, Mighty One, to speed up today. I must break a record!"

That is it—records! The track athlete develops a mania for records. The spectators cry for records and are openly disappointed when a runner completes a race at an ordinary speed. The newspaper reporters swarm around records like flies around jelly, for records make the headlines!

And now the latest sport that is being promoted among high school boys is crew. Not just rowing for the pleasure of the sport, but honest-to-goodness competitive crew with a vengeance.

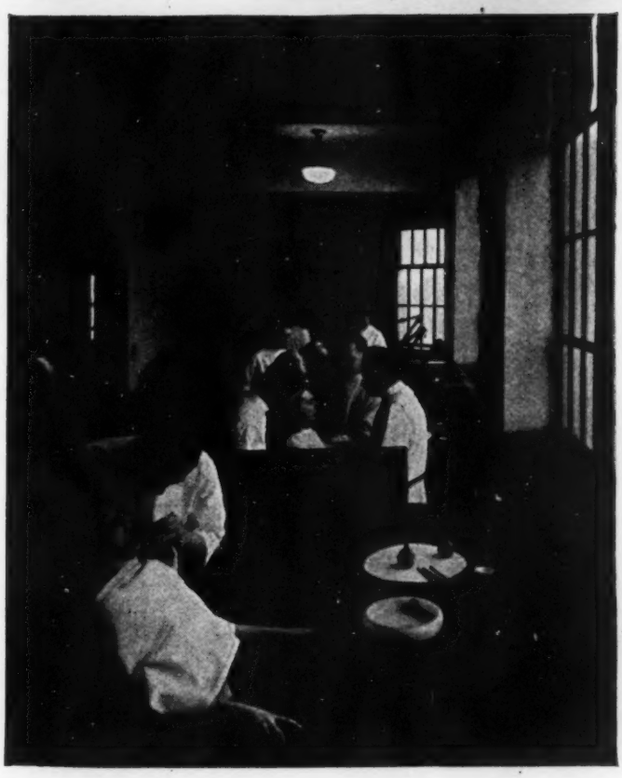
Just what competitive crew will do to the health of immature boys remains to be seen. One thing is sure, the boys taking part in the races will "put all they have into the race" to win. That is natural.

If competitive crew is a sport beyond the physical ability of boys, the school authorities should be blamed for permitting such a sport to get started. One Pacific coast city raised money enough to send their high school crew to the eastern coast to compete in races there. All this comes about because high school boys, if permitted, will imitate everything colleges do in the way of sports.

The continued effort to speed up is bound to be harmful to the human machine. The human body can do great physical feats with no apparent harmful effects, providing the physical activity is not maintained over too long a duration or is not too frequent. With frequent rest periods the muscles will respond readily. But, like so many other persons in our frenzied modern life, many athletes are strenuously and needlessly overdoing. *(Continued on page 1142)*

TEETH *and their importance*

DENTISTRY IS ORAL MEDICINE; in common with all phases of medicine it concerns also people's general health. Public regard for the profession of dentistry has risen greatly during the last fifty years. A hundred years ago professional dentistry was just beginning. All sorts of mechanics extracted teeth and made artificial ones. Today, the dentist's duties combine those of a busy executive, a laboratory technician, a surgeon and often those of teacher and editor. These pages illustrating the work of the dentist have been compiled with the cooperation of the American Dental Association.



TO FIT YOUNG MEN FOR DENTISTRY, schools must combine theory with as much experience born of actual practice as possible. All dental colleges require at least two years in a school of liberal arts, where the students must learn chemistry, zoology, physics, English and sociology. Then they transfer to the professional school, where four years are spent learning mouth physiology, oral pathology, orthodontics and surgical anatomy and extraction. In their clinical courses they diagnose the patient's trouble themselves and then have their professors' sanction before proceeding with the treatment. The colleges maintain outpatient clinics where patients pay only for materials used. Clinical work begins in the third year, and a major part of the student's time for the next two years is given over to actual dental work on patients.

For those who wish to specialize in one phase of dentistry, postgraduate study is required. While the undergraduate curriculum offers instruction on general medical science and the mechanics and art of dentistry, the field is too broad to permit real proficiency to develop in any one subject in so short a time.

LIFE BEGUN WITH A GOOD SET OF TEETH usually finds life ending with better than usual teeth. Children born in the last decade have reaped the beneficial results of one of the greatest contributions made to dental science: Under the cooperative care that every physician and dentist can now give the pregnant woman, the growing child's tooth structure can be built so well that the possibility of any future decay is greatly diminished. They have begun life well.

Acme

AS EARLY AS POSSIBLE during pregnancy, the well informed mother sees to the care of her own teeth.

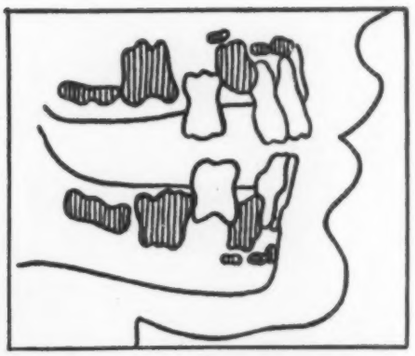
Shigeta-Wright

SHE WILLINGLY ADHERES to a diet high in vitamins and minerals, for much depends on this.

Acme

ALTHOUGH AT BIRTH no teeth are actually visible, nature has practically completed the crowns of the first, or deciduous, set of teeth. A moment of high elation is felt by every mother when her baby's first tooth erupts at about 6 to 8 months.

H. Armstrong Roberts



A CHANGE IN TYPES OF FOOD in the diet is often responsible for the child's fretfulness when cutting teeth, because the normal youngster's teeth should come through without hurting.

Black Box

THUMB SUCKING should not be tolerated; it can change the facial contours if allowed to persist.

George A. Thompson

TO KEEP THOSE TWENTY little teeth in the best condition, the child's diet should be wisely administered.

Gordon Coster

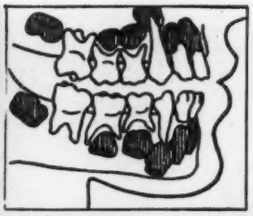
WHEN HIS FIRST SET is complete, usually at about 2½ to 3 years, he pays his first visit to his dentist.

Gordon Coster

HIS TOOTHBRUSH should have no more than five or six rows of bristles set wide apart.

H. Armstrong Roberts

HIS FIRST PERMANENT TEETH are the sixth year molars. The chart shows the deciduous teeth in relation to the permanent ones and the partially developed crowns of his second permanent molars, which erupt at the age of 12.



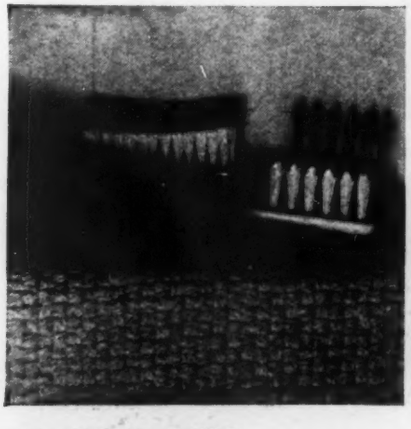
THE TEEN AGE presents problems unique at this time. The habits become less regular, the diet less observed; therefore the teeth are liable to suffer and decay may form if dental supervision is not strict.

Ewing Galloway

BEFORE orthodontic work this boy's teeth protruded.

HIS PROFILE showed a receding chin effect.

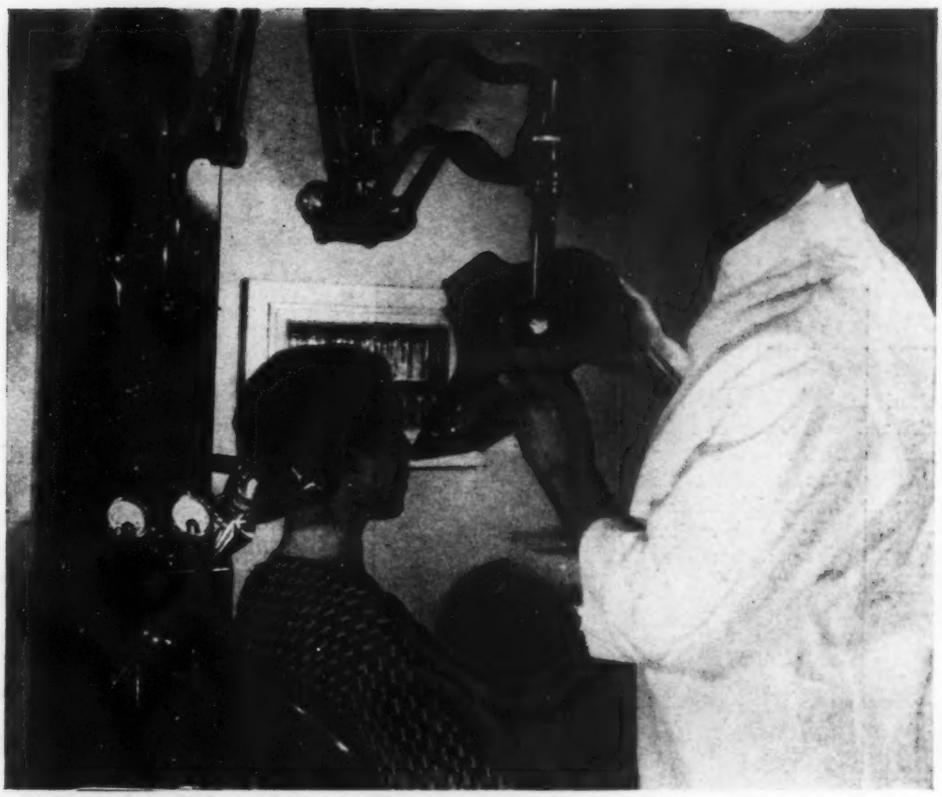
AFTER his teeth were straightened, his looks improved.



THE SMALLER BRUSH is usually preferred for its flexibility.

MOTTLED ENAMEL results from water with fluorine in it.

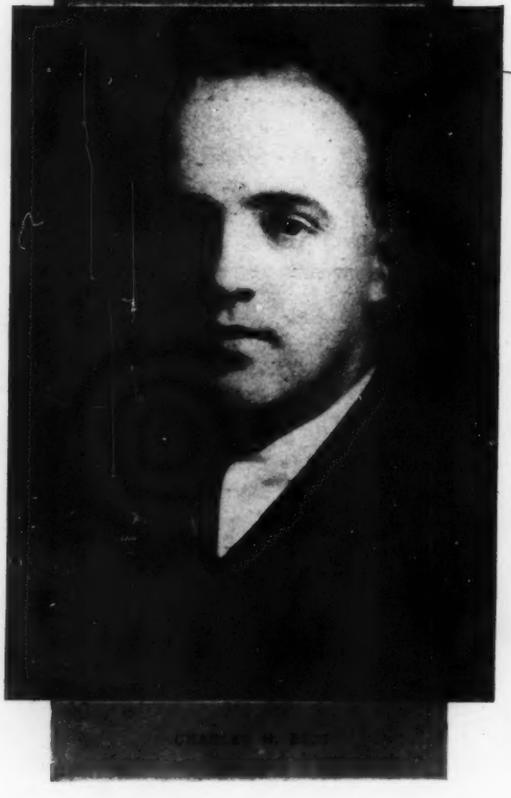
PYORRHEA has attacked this person's teeth.



UNSUSPECTED AREAS of decay and early evidence of pyorrhea may now be detected by use of the x-rays. These modern eyes of science obviate much unnecessary aching and many abscesses by detecting the trouble before it reaches this stage.

MUCH OF A WOMAN'S BEAUTY depends on her smile, and no smile can be pleasing if the teeth are distractingly ill formed or missing. The one way to maintain good mouth health and beauty is to prevent decay by having your teeth carefully watched by the person who is trained to detect impending trouble—your dentist. He can also advise you on preventive matters pertaining to diet and daily care.

What You Should Know



DIABETES is a disease in which the body is unable to utilize sugar properly. This is due to an insufficient amount of a substance secreted by a certain portion of the pancreas called the islands of Langerhans. This substance is called insulin and was discovered in 1921 by Drs. Banting and Best, working at the University of Toronto.

To understand diabetes better, it is well to know what happens to sugar after it enters the body as food. If it enters in the form of starch, as it does when bread or potatoes are eaten, there is a substance secreted in the saliva called ptyalin that digests and converts it into the simplest sugar, glucose or dextrose. The glucose is absorbed by the blood vessels of the intestinal wall and carried by them through one of two paths, either to the liver or via the aorta to the general circulation. Most of it, however, goes to the liver, where it is converted into the animal form of starch, called glycogen.

As glycogen, the sugar is stored in the liver to be ready for the needs of the body. If a muscle is in need of sugar, it produces a demand on the liver, and as a result the glycogen stored there is broken down into glucose, poured into the general circulating blood and carried to the muscle, where it is again converted into glycogen and stored for future need. Whenever it is to be used then, the muscle can convert this glycogen into glucose and burn it with the aid of oxygen—just as any burning occurs—to form carbon dioxide and water. The blood carries the oxygen in the hemoglobin, or the coloring matter of the red blood corpuscles. It gives this oxygen up to the cells for the purpose of oxidation, or burning; and when the carbon dioxide results, it is carried to the lungs and is expired. The result of this oxidation, or burning of glucose, is energy in the form of heat; and the body converts this heat energy into any other form of energy needed, such as motion.

Insulin, the pancreatic secretion from the islands of Langerhans, is particularly necessary to the final oxidation of the glucose. If it is not present, the glucose formed cannot be utilized, and it returns to the blood, thus causing an

About Diabetes

By SAMUEL GITLOW

increase in the sugar of the blood. If it is excessive, it causes too rapid utilization of the glucose which comes to the tissues through the blood, and there results a lower blood sugar level than normal. An excess of blood sugar is called hyperglycemia, and a deficiency, hypoglycemia.

Reverting to diabetes, which is a disease with a deficiency of insulin, it has been shown that there is an increase in the blood sugar due to an inability to utilize it. The kidneys are so constituted that they tend to conserve the sugar in the body. This is accomplished by the ability of the kidney to prevent excreting sugar into the urine until a certain level of blood sugar is reached. If this level is exceeded, sugar appears in the urine. This level of excretion is called the renal threshold.

The normal blood sugar level eight to ten hours after eating, called the fasting blood sugar, is about 100. The renal threshold or the level above which the kidney begins to excrete sugar is from 160 to 170. In the normal individual this level is never reached, even if relatively large amounts of glucose are taken, and especially if a mixed meal is eaten, for this causes a relatively small rise in the amount of blood sugar. In the diabetic person, however, the fasting blood sugar is above 130, and the rise after eating glucose or a mixed meal is excessive and certainly above the threshold value of 160 to 170. Thus as a result, sugar appears in the urine. It is for this reason that determination of the blood sugar should be done in the diabetic patient only when the urine does not contain any sugar.

Diabetes is a disease usually of adult life, particularly after 40. The Hebrew race is exceptionally prone to it. It is more liable to develop in obese persons than in the thin, although none are excluded. Its incidence in the population has gradually been rising; this is due partly to better diagnosis, partly to more persons reaching the age of its usual incidence and partly to unknown causes, possibly the increased tempo and stress of life.

There is no question that heredity is an important factor, and this has been seen more clearly as more careful studies have been made. Diabetes is relatively rare in children; but when it does occur, there is a greater evidence of heredity than in the adult.

The symptoms of diabetes are excessive hunger, excessive thirst, excessive urine, itching and loss of weight and strength. The excessive hunger is produced by the loss of food in the form of sugar in the urine; the thirst by the increased water in the urine necessary to excrete the sugar, and the itching by the fermentation of drops of urine left. The loss of weight is due to the rapid loss of water and to the insufficient amount of food used, because some of it is excreted in the urine in the form of sugar.

The treatment of the diabetic resolves itself into furnishing the body with a diet that is sufficient to supply the body with its needs, and if this cannot be given without producing sugar in the urine, the administration of enough insulin to overcome the high blood sugar and the resulting excretion of sugar in the urine.

Despite the use of insulin, the diet has to be carefully arranged with specific amounts of food and with a specific dose of insulin.

The severity of diabetes is quantitatively measured by the amount of sugar that a person can use in twenty-four hours without the production of any sugar in the urine. In general, the dividing line is 50 Gm. (grams) of sugar. Above this level, diabetes is either moderate or mild. Below this level, diabetes is severe. Insulin must be used in the severe cases; it may be used for the moderate cases, and it usually is used, though it need not be, for the mild cases. In the light of the more recent work, the sugar part of the diet should represent 100 Gm. or over; and if this results in sugar in the urine, sufficient insulin is given to overcome the condition.

The protein fraction of the diet should be just enough to replace that used up in the body. This means the use of approximately 0.5 Gm. per pound of body weight.

The fat requirement is gotten by giving enough of it to fill in the need for food, which is represented by the calories or the number of heat units necessary. The number of calories is determined in the diet by the fact that every gram of sugar yields 4 calories, every gram of protein 4 and every gram of fat 9.

The energy or caloric needs of the body should always be calculated for the normal weight of the individual and not for the weight at the time of examination, because that weight may be above or below normal. In addition, the weight of the diabetic person is best just a little below the normal, especially in the adult, who is usually above 40 years of age.

The caloric needs of an individual are determined by the fact that at a quiet occupation they are about 15 calories per pound of body weight. This is proportionately greater in children, who need an added quota for growth. In children, too, the protein need is greater for this reason.

Today, diabetes is a mild disease because when actually severe it is rendered mild by insulin. Its severity is increased by infection, by nervous disturbances and by improper diet. Today, the diabetic patient rarely dies of his diabetes; that is, in diabetic coma. He usually succumbs to one of the complications. The most important of these is diabetic gangrene of the feet. This makes care of the feet extremely important. The following are good rules for the diabetic:

1. Keep the feet clean by bathing in lukewarm water with a bland soap.

2. Thoroughly dry the feet, especially between the toes, but in a gentle manner so as not to injure the skin.

3. Anoint the feet with lanolin if they are harsh and dry; this will remove all scales and render the skin supple.

4. Never cut corns or calluses, but file or sandpaper the callus off after it is softened by soaking in water. The corn may be removed with a salicylic acid collodion applied daily for several days and then soaked off.

5. If anything is wrong with the feet, consult your doctor immediately.

Acidosis is a complication that is the result of improper diet and insufficient insulin. It may occur in the presence of infections and other complications. Acidosis is due to the fact that the fat portion of the diet is incompletely oxidized so that it does not reach the final stage of carbon dioxide and water. Certain organic acids form and decompose into acetone. It is extremely important to recognize acidosis because it is the precursor of coma, which is but an aggravated form of acidosis. Acidosis cannot be ignored or taken care of by the patient. It requires immediate attention by a physician and should not be temporized with. In its early stages it can be controlled in a few hours. It is for this reason that carbuncles, boils and all other infections should immediately be seen by the physician. If not, the acidosis may result in grave damage.

"Once a diabetic, always a diabetic." The cures of diabetes are rare, and they occur only in certain types of diabetes. The reward of care with diet is health, avoidance of complications and improvement in the diabetic status itself.

In children, diabetes is a more difficult problem, especially if the child is below the school age and not amenable to reason. In such cases, the mother in particular has to be vigilant, for children are apt to accept candy or ice cream from a playmate. Insulin too has to be used in practically all diabetic children, and this has to be handled by parent or nurse. It is particularly in children that the hope of great improvement in diabetes can be held out. After 10 or 12 years of age the diabetic child should be taught the fundamentals of his diabetes; that is, calculation of diet, the testing of urine for sugar, the injection of insulin, how to vary the dose with the appearance of sugar in the urine and the symptoms and treatment of low blood sugar, or hypoglycemia. All this is the burden of the attending physician.

If there is a diabetic heredity the individual should make every effort to avoid obesity, even to the extent of constant dieting, for such care will either prevent the occurrence of the disease or greatly delay its onset.

If the diabetic patient is in doubt about anything, the doctor should be consulted. At any rate, he should see the physician once in two months for a general check-up and whenever a blood sugar determination is necessary. By following out these instructions, the diabetic can have the expectancy of as long and happy a life as the nondiabetic.

TUBERCULOSIS among the ESKIMOS

By Clark M. Garber

THE WORLD population of Eskimos is conservatively estimated at 40,000, and of this number our northland territory, Alaska, is the habitat of more than one third. Of Alaska's 14,000 Eskimos, at least 60 per cent have tuberculosis in either the incipient or the active stage, and in some sections of the territory the percentage is even greater.

How is it, then, that nothing seems to be done about the situation? The Eskimos of Alaska are generally conceived to be wards of our government; yet little is done toward the alleviation of their deplorable living conditions. Perhaps it is because the Eskimos are an economically unimportant factor in our own civilization; or they may be so remote, so far from the public eye, that it is thought unnecessary to give them more than enough attention to satisfy those who would scrutinize the Eskimo problem. But we are Americans and are supposed to be humanitarian, and we pride ourselves on our great institutions of mercy. Yet tucked away in a remote, almost uninhabitable part of our country are the Eskimos, a people who have suffered much at the hands of the white man, a people who receive little and give all, because their civilization is inferior to ours. It is a biologic law that when the white man's civilization comes in contact with a primitive people the primitive or inferior race always succumbs. But have we Americans the face to allow our civilization, especially the white man's plague, to obliterate the Eskimos without making some conscientious effort to save them or at least postpone their ultimate extinction?

Occasionally a tuberculous Eskimo finds a bed in a government hospital, where he can be gracefully permitted to die. I do not infer that no effort is made to treat him and make his passing easier. That is not the case. However, such tuberculous Eskimo patients as are hospitalized are those who have arrived at the acute stage of the disease and have no chance for life. The tuberculous Eskimos who are hospitalized are few and far between. In the first place there would have to be hospital accommodations in Alaska alone for no less than 700 Eskimos with active tuberculosis. But the present hospitals established in the Eskimo section of Alaska have facilities for not more than 70 patients at their maximum capacity. From these figures it will be seen that the present hospitalization of tuberculous Eskimos in Alaska is no more than 10 per cent of the patients needing treatment. In the second place the present degree of medication, treatment and isolation of Alaska's tuberculous Eskimos is little more than a gesture. In no case has the prevailing system of treating these patients effected a cure or even an arresting of the disease. I have seen numerous patients admitted to hospitals only to be discharged as soon as they show a small degree of improvement.

It is true that the Eskimos had tuberculosis prior to their contacts with our civilization, but its frequency at that time was very low as compared to its present increasing prevalence. But how foolish it would be to offer this fact as an excuse for our apparent ineffective medication, care and hospitalization of these patients. The remarkable increase in the frequency of tuberculosis among the Eskimos must have a stimulus of some kind somewhere. To discover this cause does not involve an exhaustive medical analysis of the Eskimos' present physical status. Its discovery will not be made merely by recognizing the disease through its symptoms. We must search the Eskimos' history if we would find the real cause of the trouble. We need not delve into Eskimo antiquity more than 200 years to learn the conditions which brought about this rapid development and diffusion of tuberculosis.

WHEN AN ESKIMO BECOMES SICK, ALL HIS FRIENDS, RELATIVES AND NEIGHBORS COME TO VISIT HIM.

The Eskimo age level at which tuberculosis first manifests itself is approximately 10 years, and it involves those years when the young Eskimo man or woman is passing through the age of adolescence and early adulthood. If during this period in their growth and development they have an abundance of good Eskimo foods, blubber, fresh meats and fish the likelihood of tuberculosis is reduced to a minimum. Eskimos who have passed through their thirty-fifth year seldom become victims of the "white man's plague." Those who were fortunate enough to attain adulthood before they came in contact with the white man's civilization, in most cases, succeeded in weathering the drastic changes wrought in their life processes.

Discovery of active tuberculous cases among the Eskimos depends at present on symptoms visible to the naked eye. In other words, it is impossible for doctors in Eskimo Land to make a complete scientific diagnosis to determine the presence or absence of tuberculosis in the patient. Because the x-ray machine has not reached the remote hospitals among the Eskimos, they are denied a most valuable means of discovering the presence of tuberculosis. Doctors and nurses in these far-away parts of the world must depend on the time-worn methods for recognizing the disease. These are persistent cough, afternoon fever, loss of weight, undue fatigue and hemorrhage. But any doctor or nurse of Eskimo people knows that when these visible symptoms become evident, it is virtually too late to give the patient any hope of recovery. Experience and a knowledge of these conditions should induce those who are responsible for Eskimo medical relief and welfare to take prompt and effective action to alleviate the situation. This can be accomplished by providing existing hospitals with modern scientific equipment and by a substantial increase in the number of hospitals, doctors and nurses. Also sufficient funds must be appropriated for effectively carrying on the work. Few can realize what it means to endeavor to carry on an efficient medical and welfare work among a primitive people without sufficient funds to do the essential things.

In order that we may better understand just what happened to the Eskimos, let us mentally reverse the situation. Let us assume that the Eskimos are a race of people superior to our own race, that they have thrust their culture on us as the white man thrust his culture on them. They have destroyed our source of foods and have forced us to adopt their diet of raw meat and blubber. The natural outcome of an invasion of this kind is the development of serious organic troubles and new diseases, which we are constitutionally unprepared to combat. With this in mind, we may then visualize just what happened to the Eskimos with the coming of the white man. At first the effect was barely noticeable, but as the white man rapidly depleted the Eskimos' natural food supply, it became more pronounced. The change was too sudden. Their evolutionary processes could not be speeded up to accommodate such a sudden alteration of their life's normal course. In fact, the change

was a severe shock to their constitutional and physical structure. Natural resistance to disease was thereby broken down, and tuberculosis found a new type of human being on which to inflict its deadly powers.

In their racial evolution the Eskimos had developed a highly specialized diet, and at the same time their processes of digestion and assimilation became especially adapted to the use of their peculiar foods. Constitutionally they had evolved a high degree of immunity to the diseases native to their own environment. In primitive Eskimo colonies where the white man's influence has not reached, this immunity still prevails. The primitive Eskimos live in the midst of extreme filth and, remarkable as it may seem, they are comparatively free from disease. Many items in their diet would wreck the digestion of a white man and would result in severe gastric disorders. Some explorers and others have claimed that the white man could readily subsist on the Eskimos' diet. Doubtless some of their foods could be handled by the digestive organs of a healthy white man. I am certain of this, because I have eaten some of their foods over a rather long period without any noticeably bad effects. But the white man could not accept the Eskimos' diet *in toto*.

From the blubber of the seal, walrus and whale the Eskimos get their vitamin D. Seal oil in particular has been found to contain this valuable vitamin in almost the same proportion as cod liver oil. This is doubtless a factor in the natural good health condition of the primitive Eskimos. It stands to reason that the Eskimos would have been an extinct race long ago had they not had an abundance of this vitamin in the natural oils and fats of their diet. Especially is this true during the long Arctic winter, when months pass without a glimpse of the sun. Furthermore, the Eskimos' dwellings are conspicuously dark and dreary. The innie, or underground home, is indeed a dingy, dark and foul-smelling place. It has only one window, which is a skylight about 2 feet square. This is covered by a translucent material made of seal or walrus intestines, which effectively prevents the entrance of any sunlight. In this dungeon-like home, the Eskimo spends the major part of the long winter without fresh air or sunlight.

IF ESKIMO BOYS AND GIRLS HAVE PLENTY OF GOOD NATIVE FOODS FROM ABOUT THE AGE OF TEN TO TWENTY THE LIKELIHOOD OF THEIR GETTING TUBERCULOSIS IS GREATLY REDUCED.

Growing Eskimo children, like white children, require plenty of sunshine, and in the absence of natural sunshine the best substitute available must be provided. Nature took good care of the Eskimo's needs in this respect. She provided him with foods rich in vitamin D and gave him a powerful digestive system so that he might properly prepare and assimilate such foods. But regardless of this special adaptation in the Eskimos' physical and constitutional structure, tuberculosis took many lives among them, even before the white man interfered. The development of tuberculosis in the Eskimo race was a result of their habitat, environment and filth. But the frequency of the disease was minimized to some extent by their constitutional immunity. Abandonment of their natural foods and adoption of the white man's foods gave speed to the increase in the number of tuberculous cases among them. Tuberculosis increases among the Eskimos in virtually the same ratio as their Americanization is effected.

From the iodine content of marine fishes the Eskimo acquired an immunity to goiter. Fish was not the only item in the Eskimo's marine diet. He ate almost every form of marine life on which he could lay his hands. Marine crabs, clams, lugworms and a great variety of fishes such as halibut, cod, tomcod, smelts, flounders, salmon and whitefish, not to mention the larger forms of marine life, were all very important items in his diet. Consequently the Eskimo's blood stream was rich in those elements which produce a sound body structure. Such maladies as appendicitis, stomach and bowel disorders, cancer, dental decay and many other diseases in the category of the white man's bodily ailments were unknown to him. But as soon as the Eskimo abandons his own diet, even in part, and begins to eat the white man's food all these ailments appear, and there is a corresponding increase in the number of tuberculous cases.

Primitive women the world over are exceptionally susceptible to the influence of white men, and the gullible Eskimo women are not excepted. In this respect it was unfortunate that Eskimo colonies were invariably established on the sea shore. There they were an easy prey for ruffians from the whaling vessels.

In 1931, I made a survey of the tuberculosis situation in twenty-three Eskimo villages having a total population of 3,244 people. The accompanying tabulated data will give the reader a true conception of the prevalence of tuberculosis as portrayed by this survey. Here is concrete evidence of the danger of tuberculosis to the Eskimo race. In some of these colonies the Eskimos have had frequent contacts with the whites, but in a few of them these contacts have been very infrequent. Of the total population, 180 of the people died within the period of one year, a mortality rate of 5.54 persons for each hundred of population. Of this total mortality rate no less than 4.32 persons out of every hundred died of tuberculosis; that is, 77.7 per cent of all deaths were due to tuberculosis, while 23.3 per cent were due to other causes. This mortality rate applies especially to, and is even higher in, those colonies where the Eskimos have been weaned away from their native diet and culture or have been forced to adopt the white man's diet for economic reasons. Thus we have definite proof of the prevalence of tuberculosis among the Eskimos of the world, because the same mortality rate is just as applicable to the Eskimos living outside of Alaska.

Eskimo Mortality Table for 1931

Village	Population	Deaths Due to Tuberculosis	Deaths Due to Other Causes	Total Deaths
Akiak	180	9	3	12
Akiachak	210	9	2	11
Bethel	250	14	4	18
Eek	120	7	1	8
Quinhagak	145	6	2	8
Goodnews Bay	190	6	9	15
Hamilton	70	3	3	6
Hooper Bay	180	7	2	9
Mt. Village	130	6	2	8
Nunivak	60	3	1	4
Pilot Station	90	3	0	3
Quigillingok	138	9	3	12
Quithluk	205	6	1	7
Russian Mission	62	6	0	6
Shageluk	170	7	0	7
Sleetmute	88	3	1	4
Tanunak	102	4	0	4
Nunachak	120	5	0	5
Kotlik	118	8	2	10
Tuliksak	155	6	1	7
Kipnuk	184	5	0	5
Kalskag	97	3	1	4
Keengegan	180	5	2	7
Totals	3,244	140	40	180

Deaths per hundred of population	5.54
Tuberculosis deaths per hundred of population	4.32
Percentage of deaths due to tuberculosis	77.7
Percentage of deaths due to other causes	23.3

The rapid spread of tuberculosis among the Eskimos may also be laid at the door of ignorance and poverty. The transmission of diseases by unseen germs and bacteria is unknown to them. Furthermore, it is impossible for them to conceive of a sickness being caused by agents which they are unable to see. When an Eskimo falls sick, all his friends, relatives and neighbors come to visit him. They do not know that by their visits they too may contract the sickness and carry it home to their families. In the home of a tuberculous Eskimo they know nothing of disease prevention by sanitation and hygiene. They reason *(Continued on page 1152)*

"Something must be done about the Eskimo"—and something must also be done about those thousands of young people in our own country who still fall victim to the "foe of youth." Science is inching its way to victory; but here, as in Eskimo Land, intelligent cooperation is essential. For that reason, the American Medical Association and the National Broadcasting Company will present a dramatization on "Tuberculosis and the Teens." To learn how bad habits of hygiene and unwise living, plus infection, favor tuberculosis, tune in for this broadcast on Wednesday, December 7.

Acute Indigestion— or is it HEART DISEASE?

***Often masquerading under the guise of indigestion is trouble of a more serious nature—perhaps heart disease, says* LOUIS F. BISHOP jr.**

ACUTE INDIGESTION is often a "wolf in sheep's clothing." Have you ever seen a man suddenly doubled up, dizzy, nauseated, faint, struggling for breath, barely able to stand up straight? Nine times out of ten he has an attack of so-called "acute indigestion." Don't take this too lightly if it happens to you, too, some time, for it may be a warning that other things are wrong with your body. It may be your heart. Blaming heart failure on acute indigestion has in the past been a "blanket thrown over sudden death from infancy to old age," but not any more.

Recently I saw by a headline in a newspaper that an important business man had been stricken with acute indigestion and was in a critical condition. I also noted nine days later that he died. The newspapers leave it at that, but you and I can't afford to dismiss acute indigestion so lightly. Such attacks often mean an upset of the whole system. It is like a serious family row, a sudden squall in the marital bark, a tipping over, and it swamps the ship. On the other hand, we can often thank our lucky stars that sometimes our stomachache is just the growling kind, say dyspepsia or chronic indigestion. Then it is more like the bickering that goes on spasmodically in some family life; it is just rocking the boat.

Both acute and chronic indigestion make their victims uncomfortable, cut down efficiency and may be dangerous. How can they be avoided? First, it is important to know what stomachache of the ordinary garden variety is, so that in the future if acute indigestion should bear down on you or a member of the family, you may know what to do about it. Some persons have stomachs that are bound to ache, for they are born that way; but such stomachs are in the minority. Suppose nature gives you a "dropped stomach." Then until your doctor detects it in an x-ray picture you may have many aches and pains. Abdominal belts are worn, and gallons of water and bicarbonate of soda are consumed for such a stomachache, but *it is not acute indigestion!*

Nature can play other underhand tricks. You may be born with a freakish stomach that is like a pineapple cake, for it is "upside down." You may think it hard enough to pay for food in these days; but in case you have an upside down stomach, you pay for that food again when you eat it, for then comes the stomachache!

Nature having given you a "dropped" or "upside down" stomach, the best thing for you to do is to leave your problem to the doctor.

More common is the indigestion that is due to gas bubbles that travel gaily from one part

IN SMALL CHILDREN THE MOST FREQUENTLY ENCOUNTERED STOMACHACHE IS THAT CAUSED BY IMPROPER HYGIENE.

of the stomach or bowels to another. These bubbles may be far down in the stomach, or they may float as high as the heart; they may press on the diaphragm, which in turn pushes the heart and affects the breathing. These bubbles are pretty to see behind the fluoroscope. They are like small balloons; but the poor rascal who has them feels as though they weighed a ton. Too many cocktails can produce a fine crop of gas bubbles, and here consumption must be cut down. Other reasons for gas bubbles are more serious and should warn of trouble ahead, perhaps in the heart. But these gas bubbles *are not acute indigestion!*

Consider for a moment the old-fashioned idea of acute indigestion and what brings on the attack. The bad effect of taking too much food or decomposed food we know to our sorrow. "Nerves" too can make some of us "sick to our stomach." In hot weather cold fruit may lie like a lump of lead in the stomach. A hearty evening dinner of corn and watermelon is fine at 7 but not so good at 11! For any of these reasons you may become bloated, tired, giddy, faint or cold; your mouth may "water"; you may hiccough; you may have diarrhea, and you may feel that all is lost until you vomit. One severe attack of vomiting may end your acute indigestion; again vomiting may last until whatever made you sick is cleared out of your system.

In older persons, acute indigestion is rather rare, because experience has taught them how to avoid foods that disagree with them. It is seen most often in children, particularly in infants, but it may occur at any age. Heredity plays a part, for it is supposed to run in families. People are often allergic or sensitive to certain articles of diet. Strawberries, radishes, eggs, cucumbers, onions, pickles, shellfish and even the innocent broiler may be to some like the rag to the bull.

The kind of stomachache that follows improper hygiene was recently well brought out in a moving picture, "Captains Courageous." In this play the young boy treats his friends to an ice cream soda on the trip and immediately drinks five to demonstrate his ability. He gets sick and subsequently falls off the boat. The treatment of such indigestion is obviously more dietetic than medicinal. Your 22 feet of intestines serve you pretty well most of the time, but don't insult them too often.

Such a type of indigestion must not be confused with that which comes on at a later time of life when the heart is liable to accident. The symptoms are not truly digestive, for the trouble really lies in the heart. Then acute indigestion is a "wolf in sheep's clothing." It is then the heart that is causing the stomach symptoms. Flatulence and constipation may be forerunners of weakness in the heart. Arteriosclerosis with high blood pressure is easily affected by digestive disturbances. In high blood pressure and heart disease you may have gas in the upper part of the abdomen together with tenderness and dyspepsia. In coronary thrombosis there is frequently vomiting at the outset of the attack and a general feeling of distress which is often mistaken for "acute indigestion." You often hear people who have heart disease complaining, "I wouldn't know I had a heart if it weren't for my stomach" or "My stomach is like a watermelon."

I remember a writer of a former time who used to describe well the "affections of the heart and its neighborhood." And perhaps the best way to explain the mystery of acute indigestion is for you to think of your whole body as a family, your stomach being the brother and your heart the sister. This brother and sister

get their nourishment from the blood and their "pep" from the nerves; one shares the good health as well as the ill health of the other.

So closely related are your stomach and your heart that, when you have a stomachache, you often rush to your doctor and say, "What shall I do, I have such a pain in my stomach?" He examines you. Surprise! For sometimes he will say "It's your heart." For instance, the other day a seemingly robust man of 50 went to the city after spending the summer at the seashore. His friend who accompanied him home said, "Mac, I never saw you looking better." But that night Mac died —of "acute indigestion," which was in reality a heart attack. His wife remembered later that he had complained of being tired. The sister of his system, the heart, was not equal to the strain; but it was the big brother, the stomach, who got the blame.

THIS SO-CALLED ACUTE INDIGESTION IS OFTEN A SERIOUS MATTER IN LATER LIFE. IT CALLS FOR IMMEDIATE MEDICAL ATTENTION, BECAUSE ITS TRUE BASIS MAY NOT BE INDIGESTION AT ALL BUT DISEASE OF THE HEART.

On the other hand, you might have a pain where you think your heart lies. You say to the doctor, "I have such a pain in my heart. I'm afraid I have heart disease." Again surprise! "It's your stomach," says the doctor. For example, a woman recently had a severe illness and had become dehydrated, there being practically no water left in her at all. When she was given food, the pylorus, the opening from the stomach into the intestine, would go into a spasm and eject the food forcibly. Her heart would palpitate in a tumult. Yet she did not have heart disease. It was just that sister of her system beating hard in sympathy with the brother, the stomach. As soon as she was given salt, her whole system calmed down, the heart as well as the pylorus. When you consider the mystery of acute indigestion in this way, it is easy to see that you should take better care of those Siamese twins of your system. As sure as fate, if you maltreat your heart, your stomach gets riled, and vice versa.

As a matter of fact, few people die of acute indigestion. It is a much misused term. A severe heart attack will upset the whole system. That circulatory family of your system, which includes the heart and blood vessels, will be upset; and the rest of the family, the stomach and nerves, will certainly get drawn into the row as well. If the main symptoms during the attack are of a stomach nature, that is, vomiting, gas and nausea, then it is called acute indigestion; whereas in reality the true background is essentially due to the accident that has happened to the heart. In other words, the brother and sister of your system are simply staging a masquerade party!

What type of accident to the heart would be likely to give such severe disturbances to the intestinal tract that one would label it acute indigestion unless one knew the true cause? The most common accident is that in which a clot has shut off the blood supply to the heart. This is known as coronary thrombosis. The heart is supplied with two large blood vessels which, on entering the heart, divide into smaller blood vessels, and these finally separate into still smaller blood vessels, which are like twigs. Think of them as a large tree and its branches, these blood vessels of yours. In penetrating the heart these blood vessels supply it with the blood that is necessary to keep you alive. Should this blood supply be abruptly cut off, there is a tremendous shock to the whole body. Common symptoms accompanying this shock may be not only the pain in the chest and a sense of impending death or disaster but also nausea, vomiting and gas, just as you would feel if you had eaten some kind of food that did not agree with you. These stomach symptoms overshadow the familiar symptoms and signs of shock: the

cold and clammy skin, the sweating and the absence of pulse. But the ability to recognize the dread picture of coronary thrombosis in time would save many a valuable life which is lost by calling the attack acute indigestion.

Another reason why these attacks are often called acute indigestion, when in reality they are heart attacks, is the fact that they often occur following large meals, such as at a banquet. In all probability the individual has had all the "build-up" that precedes a banquet and then eats a large meal, following which he keys himself up to make a speech. He then begins to feel "sick to his stomach." Then comes the attack which ends his future banquets. From all appearances one would be suspicious that this attack was due to the food eaten; but subsequent questioning will usually bring out that it was the severe type of heart attack in which the blood supply to the heart had suddenly been shut off. The newspapers still report deaths of prominent people as due to acute indigestion when coronary thrombosis was the prime offender. The stomach pain is really the protest of the cardiac muscle against being asphyxiated, for its blood supply has been interfered with by a clot somewhere in the coronary artery, and that stoppage causes the pain that is thought to be acute indigestion.

Often a man has an attack of so-called acute indigestion while playing golf; but many times it is really coronary thrombosis. Again, such an attack may come on after the evening meal. Yet the victim has eaten nothing out of the ordinary, and the attack is really the pain of angina pectoris. This occurs in the middle-aged men who are too busy to have a periodic health examination.

The treatment of these heart attacks that masquerade as indigestion is absolute rest for the stomach and absolute rest for the heart. This means total abstinence from food for twenty-four hours, and this is difficult to enforce, because most people believe that food is necessary for life, and they won't take enough rest. In those attacks, however, it is not so impossible to convince a person to take it easy, because exercise aggravates the nausea and vomiting. Even a dog knows better; if he vomits he will stop eating. As the symptoms are often similar to those of trouble in the heart and stomach, so likewise treatment depends on accurate management of both. If you ever have such an attack, get after it immediately and have a complete physical examination from top to toe.

This so-called acute indigestion is often a serious matter in later life. It calls for immediate medical attention, because its true basis may not be indigestion at all but disease of the heart. When Shakespeare said after a Gargantuan meal, "My grief lies onward and my joy behind," he might well have meant that it is not safe to overlook your stomach—especially if you have heart disease.

The term "dietary indiscretions" covers a multitude of sins—both of omission and of commission. It is applicable to those gullible geese and ganders associated with dietary fads and quacks as well as to the misguided mortals whose god is gluttony. For all of these and for the average person, who eats to live—and wishes to live well—the American Medical Association and the National Broadcasting Company will present a series of programs on the well rounded diet. *(For further information, see page 1126.)*

FORECAST FOR JANUARY—A Happy New Year

—and may *Hygeia* help to bring your ship to port with an abundant cargo of health, wealth and happiness.

In the January issue, these authors will help you steer a safe course:

Edward D. Nix tells how he and his family discovered "the best insurance for normal pleasure and health"—and how you and yours may do likewise. Start the New Year right by reading "Beating Trouble to the Punch."

S. I. Kaufman, M.D., discusses those priceless possessions, your eyes, and tells you what to do when they trouble you.

If you dread losing your front teeth (and who doesn't?), *Helen Bunnell* has a reassuring message for you.

Jay N. Fishbein, M.D., gives a word to the wise on "Why Children Catch Colds."

Edna Lewis, R.N., tells you what to do in an emergency—"When Prevention Fails."

"THE LAST ONE"

The Care of Baby's Skin

NO MATTER how large or how small, how fat or how thin your baby may be on arrival, his body will be entirely covered with skin. This covering is extremely delicate and easily injured. It must be handled with care. For if it should become broken, some treacherous germs might slip in and set up a local infection or even enter the blood stream and poison the baby's whole system.

The newborn baby's skin is always covered with a protective film. This must be removed with oil soon after birth. Unless the child is premature or sickly, his baths from the second day on are given with soap and warm water.

Pure castile soap will not injure the baby's skin. But sometimes a baby's urine or defecations cause an irritation of the genital organs and buttocks. When this occurs soap must not be touched to the parts until the skin has healed. A pound of oatmeal or a quart of bran, tied securely in a gauze bag and allowed to soak in the bath water, is a good soap substitute. These may well be used if the baby is troubled with prickly heat or on other occasions as ordered by the physician.

It is not enough, however, to use care in bathing the baby whose skin is excoriated or scratched or broken out. Unless it is definitely known that the condition is one which will soon clear up, a doctor should be consulted. If the excretions irritate the tender membranes, there may be something wrong with the baby's diet. If he is afflicted with prickly heat, there is probably too much clothing being kept on his little body. He is not having enough sun and air. His skin needs more exposure.

For the skin breathes. It is filled with minute pores from which is given off perspiration. The lifeless skin cells of the outer layer that have been replaced are pushed out of the way by newly formed cells. Daily baths are needed, regardless of the time of year, in order that the skin may be cleared of this refuse and given a chance to breathe.

The skin on top of the head is called the scalp. In very young babies a "milk crust," or "cradle cap," may form there. This should be softened with melted cocoa butter, olive oil or petrolatum and washed well daily, for the scalp, too, must be clean in order to be healthy. A fine tooth comb may be used, ever so gently, to lift the scales off.

The skin also extends over the lips and into the baby's mouth. It was once believed that the mouth should be cleaned every day. Now doctors advise that these sensitive mucous membranes be left strictly alone because many mothers have infected their babies' mouths by breaking the skin in there with sharp finger nails. Nature will keep this part of the body clean with the secretion called saliva. Plenty of sterile water offered baby at regular intervals in a nursing bottle with a screw-on rubber nipple, which he cannot pull off, will help keep the mouth clean.

The skin which lines the baby's ears and nose is tender too. Never poke at these parts with a toothpick. If it is absolutely necessary to remove foreign bodies, let the doctor do it. Use the greatest care in cleansing baby's nose lest you irritate or puncture the delicate tissues.

Sometimes in a baby who is only a few days old the skin surrounding the navel becomes irritated. This does not usually occur, but it may result from some slip in technic, such as changing the dressings with hands which have not been thoroughly scrubbed. When the skin about the navel becomes reddened and oozing appears, call the doctor! This is extremely important, for failure to do so may have serious results.

Eczema is one of the most common skin ailments of small children. It may be caused by diet; it may be traced to a family tendency, or its cause may be difficult to find. When it appears on the body its symptoms are roughness and redness of the skin. The first sign of it calls for medical intervention. If it is neglected it will spread and make the baby utterly miserable.

Hives also causes skin irritation, though it is not as troublesome as eczema. If it does not disappear within twenty-four hours, the doctor should be consulted.

A skin swelling known as a sty may develop on a child's eyelid. Sties appear in older children quite often as the result of eyestrain; but in babyhood other causes must be looked for, and they generally are found to be nutritional.

If a baby is exposed for too long a time to the direct rays of the sun his skin may be badly burned. Sunburn can be just as painful and dangerous as a burn from any other cause. It calls for the same kind of treatment as you would give any burn resulting from *dry* heat. If it is just a superficial burn, which is merely red and hot to the touch, apply old white handkerchiefs which have been wrung out of a mixture of baking soda and water. Do not apply any ointments, unless ordered by the physician.

When a baby's skin is burned by *moist* heat, such as too hot water or steam from a boiling kettle, do not apply oily substances as is so often advised, but call a physician. It is well to have a doctor see all burns since they may become badly infected. If a large part of the skin is burned at one time, even superficially, the baby's life may be endangered, for the injured

skin allows poisonous substances from injured tissues to be absorbed.

While sunburn is a danger of summer, chapping—with resultant cracks in the baby's skin—often occurs in winter. Generally the face or hands are affected, since these parts are exposed to the chill air and the wind. While chap may seem to be a trivial annoyance it should never be neglected. Cracks in a baby's lips may interfere with his nursing and impair his health. They may be prevented by rubbing a pure cold cream on the mouth before the baby goes out. Careful drying of the face and hands will also prove helpful. Cold cream or cocoa butter applied several times a day helps in healing.

Another skin affliction which is painful is the appearance of boils. They are a germ infection. They usually occur on the head, neck or buttocks. They can make a baby exceedingly sick. The germs sometimes enter the skin by means of a hair follicle or a break in the skin so small that it is not noticed.

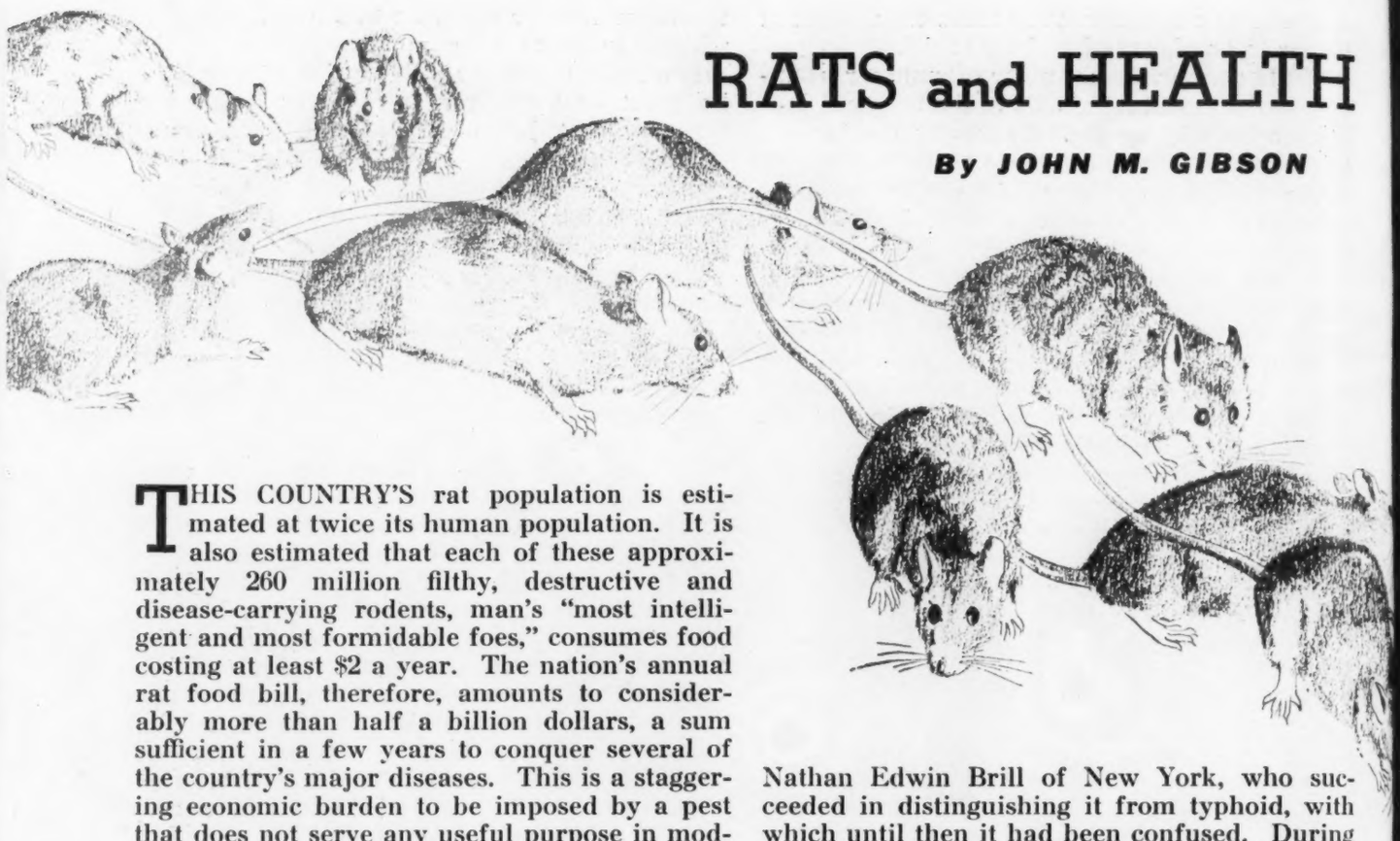
If boils appear on the skin in series, a doctor should find out the real cause. There is a difference of opinion among baby specialists as to whether and when it is best to open a boil or whether it should be allowed to burst of its own accord. It is therefore best for a mother to ask her physician which course he recommends.

If a baby has any skin eruption at any time, he must be kept from scratching it for two reasons: first, because scratching may spread the infection, and second, because it is a mother's responsibility to do all that she can to protect her baby's looks; and a tender skin dug deeply by sharp finger nails or a skin from which healing scabs are ruthlessly removed is apt to be left scarred for life.

It is therefore always best to make it impossible for the baby to get his hands in contact with a skin eruption. If the face only is broken out, put well padded pasteboard cuffs on the infant's arms. These are easily made from rolled, stiff pasteboards cut long enough to extend from above to below the elbow. They may be fastened to the dress sleeve with safety pins or held in place with gauze. They leave the hands and fingers free for play. If, however, the eruption is all over the body, it will be best to put cloth mittens on the baby's hands. Skin infections, no matter how small, are always dangerous. Only a *whole* skin is ever safe.

By
BEULAH FRANCE

Harold M. Lambert



RATS and HEALTH

By JOHN M. GIBSON

THIS COUNTRY'S rat population is estimated at twice its human population. It is also estimated that each of these approximately 260 million filthy, destructive and disease-carrying rodents, man's "most intelligent and most formidable foes," consumes food costing at least $2 a year. The nation's annual rat food bill, therefore, amounts to considerably more than half a billion dollars, a sum sufficient in a few years to conquer several of the country's major diseases. This is a staggering economic burden to be imposed by a pest that does not serve any useful purpose in modern life and is permitted to live and carry on its destructive work only because people have remained too indifferent to the mischief it does to take effective steps for its annihilation.

However, it is not as a destroyer of property or as a consumer of food but as a health menace that the rat does the greatest harm. His body is infested with fleas, lice and mites, and these are known to be mechanical carriers of disease. Some idea of the vast horde of these small parasites thus transmitted may be obtained by considering the results of a recent test in which large numbers of rats, trapped in houses, warehouses and barns, were carefully combed and were found to contain an average of fifteen fleas each. Experts of the U. S. Public Health Service have expressed the opinion that every rat having as many as four or more fleas should be considered a menace to public health.

These infected fleas and other small parasites bite persons with whom they come into contact; in other instances, people permit infected saliva or excretions from the parasites to get into their bodies by scratching or through abrasions. In either case they become infected with certain diseases. The most serious of these by far at this time, in certain parts of the United States at least, is endemic typhus fever, which is also known as Brill's disease.

This form of typhus fever, different from and fortunately less devastating than the epidemic type which has long plagued certain European countries, was first observed in 1897 by Dr. Nathan Edwin Brill of New York, who succeeded in distinguishing it from typhoid, with which until then it had been confused. During the past two and a half decades innumerable unmistakable cases have been found along the Atlantic seaboard and Gulf coast from New England to Mexico. Dr. K. F. Maxcy and the late Dr. L. C. Havens of the Alabama State Department of Health did considerable research in this disease and are credited with being the first to place responsibility for its spread on rodents as carriers of blood-sucking parasites. Later tests by members of the U. S. Public Health Service, including Drs. R. E. Dyer and Adolph S. Rumreich, have fully demonstrated the soundness of these experts' rat transmission theory, while similar tests by experts not associated with the federal government have been equally convincing. Dr. Dyer and Dr. Rumreich recovered the virus, or infecting agent, from fleas taken from rats found in areas known to contain many cases of typhus and, with their aid, had no difficulty in giving the disease to other animals.

Endemic typhus fever has a tendency to occur more frequently in the late summer and early fall than at any other time of the year in northern areas; but in warmer climates, cases are reported from one year's end to another. Men appear to outnumber women among its victims, but this is believed to be due less to greater susceptibility of the male sex to the disease than to the fact that more men than women are exposed to infection as a result of the work in which they engage. The disease is rare among children, but this too may be due less to difference

Ewing Galloway

in resistance than to that in the extent of exposure. Negroes, regardless of age or sex, are largely immune, although their immunity is not complete by any means. Food handlers, working for many hours a day in close contact with products that have been in close contact with rats, are especially susceptible. The mortality rate, varying from less than 2 per cent among those under 45 years of age to about 30 per cent among those of 65 or older, averages about 5 per cent.

Both the epidemic type of typhus, so prevalent in the squalor-cursed slums of Europe's crowded cities, and the endemic type, rapidly assuming the proportions of a major health hazard in many American states, are believed to be caused by the same germ, but the two are dissimilar both in their effects and in their modes of transmission. The epidemic type is spread from man to man, not by the rat, as is the endemic type, but by the body louse, or "cootie," which became the subject of considerable study as well as much jesting during the World War. Its tendency to confine itself largely to the poorer districts of large cities is another characteristic which distinguishes it from the other, or endemic, type, which of course does not show any such tendency. Unlike the endemic type, epidemic typhus fever is most prevalent in the winter and spring.

"It seems that murine typhus [rat borne] in man has been increasingly frequent in the United States," a writer in the League of Nations *Journal* commented in a recent issue of that publication, and a study of the records of the various state health departments reveals that there is really no doubt about it. During the five year period from 1932 to 1936 inclusive, there were 1,993 reported cases of endemic typhus fever in Alabama, with a total of 99 deaths. Thus in that state there was an average of 398.6 cases and 19.8 deaths a year. The fatality rate for the six years was 5.25 per cent. Prior to 1932 the reported cases in Alabama averaged only about 65 per year, and the average fatality rate was about 2 per cent. In Georgia the reported cases totaled 625 in 1933, 409 in 1934, 489 in 1935 and 815, or about twice the 1934 total, in 1936. In Texas there were 465 reported cases in 1934, 265 in 1935 and 207 up to Sept. 1, 1936. The decrease in 1935 and 1936 is attributed to a vigorous rat control program begun in that state in 1935. Reports are not available on the number of cases in other states, but it is well known that many of them, especially those along the Atlantic and Gulf coasts, have had the typhus control problem thrust rudely on them.

It is true that, even in those states in which it is most prevalent, endemic typhus fever still plays a relatively minor role in the drama of life and death. In Alabama, for instance, where it is especially prevalent, it is killing only a few more people every year than scarlet fever, or about six persons for every million of population. Nevertheless, health workers, looking with real concern at the rising incidence and mortality curves, see in its rapid spread a danger that in the not remote future it will present problems of paramount concern. Some even express the fear that in time it will become as grave a health problem in this country as the epidemic type has become in eastern Europe. This possibility is discussed in an article published in the *Health Bulletin* of the North Carolina State Board of Health:

> The question, then, is: Will endemic typhus, which is flea borne from rats to man, become in the future as widespread and devastating as epidemic typhus, louse borne from man to man, has been in the past? The answer to that question, it stands to reason, will depend upon control or lack of control of rats. To eradicate endemic typhus fever, it will be necessary to eradicate rats.

Almost identical opinions regarding the necessity of eradicating the rat before the spread of endemic typhus fever can be effectively checked have been expressed by many other health workers. The Bureau of Sanitation, Alabama State Department of Public Health, characterized this disease as "one of the major health problems in Alabama" and went on to say that "the extent of rat infestation of a community, the type of building construction, and the sanitary education of the inhabitants have a decided bearing on the prevalence of the disease and the difficulty of eradication."

Endemic typhus fever of course is only one of numerous forms of illness for which the nation's more than a quarter of a billion rats are entirely or largely responsible. Indeed it has been shown that these rodents, who are said to exceed all other species of mammals in the number of individuals, may harbor no less than eleven types of internal parasites which also occur in man. Many of them are infected with amebic dysentery, and this is easily transmitted by rat-contaminated food products. Paratyphoid fever, or food poisoning, has likewise been traced to rats, while large numbers of these pests are infected with trichinosis, a parasitic worm which enters the rodent's body and finds lodgment in its muscles and intestines, being passed on to unsuspecting human beings who eat meat which has come into contact with rats thus infected and which has not been properly cooked. Another disease spread by these cunning enemies of the human race is infective jaundice, which is passed on to human beings by urine contamination of food products. There was a serious outbreak of this disease in Queensland, Australia, not long ago.

It has been proved to the satisfaction of many experts that a definite relationship exists between the relapsing fever of Panama and the rat, and these pests have been accused of transmitting typhoid to food prepared for human consumption, a typhoid outbreak in an asylum having been attributed to this means of transmission. It has also been established that rats are susceptible to sleeping sickness; but as far as is known, they are not responsible for the spread of this disease under natural conditions. Besides inflicting human beings with the previously mentioned diseases and perhaps others as well, they are responsible for the transmission to animals and fowls of several forms of illness, notably hog cholera, swine erysipelas, fowl tuberculosis and hoof and mouth disease.

The elimination of the rat and the resultant removal of a heavy economic and health burden which in the past has been borne all too willingly cannot be accomplished by such halfway measures as trapping and poisoning, although these do have a part to play in any rat eradication program. Like all other living things the rat must have food and shelter to survive. Remove these, and a long step has been taken in the direction of rat extermination. This can best be accomplished by properly ratproofing buildings, especially those used as food-handling establishments and as warehouses for the storage of food products. Thus kept away from free food and comfortable shelters and breeding places, the rat's chance of survival is greatly diminished.

"DOCTORS" minus M.D.'s

By S. R. WINTERS

FOR SOME twenty years past, citizens of the United States, particularly those living in isolated areas, have been exposed to what is known in the underworld as the "Glimmer Racket." But not until a year or so ago had investigators succeeded in apprehending a sufficient number of quacks practicing the racket to begin to wipe it out. Now it is supposed that the tables are turned with fully thirty-five convicted mountebanks lodged in penitentiaries with a total imposition of sentences amounting to 177 years and 9 months, topped by fines of $9,975. But this happened only after several millions of dollars had been wangled from patients gullible enough to swallow the bait of these racketeer "oculists."

Perhaps the first public statement of any account calculated to educate the public to the dangers of employing itinerant "eye doctors" was issued in 1936 by Postmaster General James Farley, and it was due to the pressure brought to bear by the Post Office Department through its investigators that the nation-wide organization of such "eye specialists" was exposed. Such fakers are not confined to the field of optometry; they operate in surgery, obstetrics and general medical practice.

It is nothing new, this metamorphosis into professional life by illegal short cuts instead of proper scholastic training and internship. History is bespeckled with records of such crude practitioners who perhaps did less harm to humanity in general than those of modern times, because they may have been less daringly ambitious. Many of these eighteenth century charlatans added great riches to their fame, which was built on the most nebulous foundations, and tinkers and tailors alike forsook their more honest trades to rise overnight to the more doubtful fame of a quack physician. Even royalty, more often than not, stretched a hand to the climber, as in the instance of one "Dr." Joshua Ward, known as "Spot" Ward, who, having decided to practice medicine instead of peddle salt, was summoned by George II of England to treat a pain in his thumb. The pain having disappeared, King George showed his appreciation by elevating the "physician" to the Horse Guards. Furthermore the House of Commons in grateful recognition of the fine service performed for their monarch, extended a vote of thanks to "Dr." Ward and guaranteed that he should not be interfered with by the College of Physicians.

One William Read, erstwhile tailor, convinced Queen Anne that he had "cured" her chronic eye weakness and thereby attracted great credit to himself, became knighted by the queen and was one of the most fashionable physicians of his day.

At least one woman, "Crazy Sally" Mapp, stands out among these self appointed doctors. A specialist in bone setting, Sally did have some knowledge of the human skeleton but probably far too little to merit the extraordinary prestige and wealth she acquired by advertising the merits of her liniments and skill. Living in a fine mansion at Epsom, England, she drove abroad in a coach and four, attended by liveried outriders and footmen.

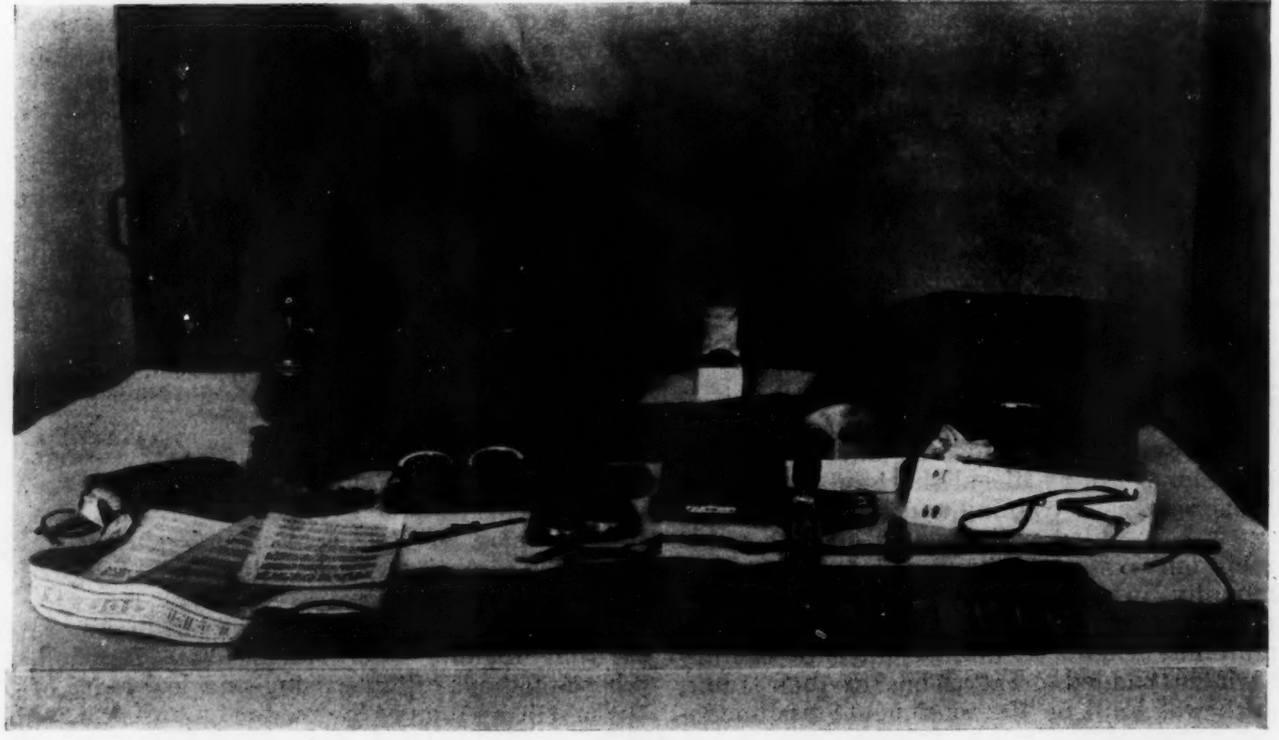
Quite as spectacularly mounted but in a more original manner was Martin Van Butchell, whose methods of advertising smacked more of the mortician than of the medical man. A large

white bone, conspicuously borne, went with him as he rode his rounds on a white pony painted with purple blotches. His wife's death gave him further inspiration for publicity; and after having been embalmed by her ambitious husband, she was also used as a gruesome but doubtless effective advertisement of her husband's skill.

While the average patient of the present or modern times is considered enlightened beyond the superstitious and ignorant individual of the eighteenth century, there are, nevertheless, countless persons extant who are susceptible material for improvement of the quack doctor's skill. Many of these, whose intellects are clouded by age and the accompanying fear of complete disability of their senses, live in remote rural districts where access to legitimate medical treatment is likely to be, at best, extremely difficult. Consequently, hoardings of a lifetime are often secured by the impostors, leaving the victims destitute, if not worse. One old lady, swindled out of her life's savings, completely lost her mind and was necessarily confined by the state in an asylum for the insane.

To apprehend these pseudospecialists was no easy accomplishment. In the main, they are a smoothly polished school of crooks, made apt by long experience in the most subtle methods of escaping detection and gaining their own ends. Not only do such impostors work havoc with their patients through lack of skill and knowledge of human anatomy, but they are often involved in active crimes of robbery and assault as well. In two separate instances an aged couple employed the services of fake optometrists, paying their fees in cash. Returning at night, the racketeers, armed with sawed-off shotguns, ransacked the house for additional money, after binding their victims' hands and feet to the floor with wire. Failing to find the anticipated money in one house, they forced the victims, by threat of firing the house, to disclose the whereabouts of additional wealth and thereby obtained a large packet of Liberty bonds, including one for the amount of $500 which had not been registered.

Ringleader in the gang, which subsequently came under arrest, was a self-styled "optometrist" of fourteen years' practice with a served jail sentence included. His wife, who had acted as his accomplice for eight years, posed as a nurse. They had lived in luxury in the finest hotels while in business. Now they are confined in jail, awaiting federal court trial. The victimization by racketeers of an invalid girl, blind from birth, who lived with her aged father, occurred in Massachusetts. For $2,500 the racketeers volunteered to restore her sight by removing what they diagnosed as a malignant growth over the iris. This was to be done



AMONG THE PARAPHERNALIA USED BY THE SELF-TERMED OCULISTS WERE TEST FRAMES, PRISM GLASSES, A BOTTLE OF PRECIOUS "RADIUM," THE FAMOUS "DR. KRUPP" BELT FOR CURING CANCER OF THE EYE, READING CHART, ORDINARY CARD OF HAIRPINS AND RIBBON AND A LIGHT REFLECTOR.

by means of liquid radium. After a simulated operation they tried to collect their price; but as the father's sole funds amounted to but $500, they had to be content with that. A five year sentence was imposed on one of the men by a state which "borrowed" him from the federal government for that period. He, with his aide, who attempted suicide and thus became crippled for life, have still to be tried on a federal charge of defrauding through the mails.

Those operating the "Glimmer Racket" have themselves been hunted like hares, not long enjoying the profits of their spoils. After spending their accumulated gold in trying to elude punishment, they have in most instances landed in jail, while their families, grown accustomed to luxuries, felt the more keenly the poverty which is unavoidable. Time after time, those apprehended have committed suicide to escape justice. Though the men, as a rule, profess a loathing for such careers as they have followed, it is not to be doubted that a great proportion of them will return to some phase of racketeering when their sentences have been completed, for they lack the qualifications for other and respectable careers. But their shrewdness as evidenced in other matters may fail to warn them that through the action of the press the public is now well advised against them. It is practically certain that prison is their ultimate destination, for they are facing increasingly difficult chances of escape.

Working in conjunction with the eyeglass pedlers the so-called optometrists pay 25 per cent commission to those furnishing names and addresses of good prospects likely to "bite" at their bait. The favorite scheme is to work in trios. First, there is the eyeglass salesman who pretends the eyes in question have some mysterious affliction past his power to heal or even diagnose. A "specialist," supposedly from some accredited institution such as Johns Hopkins, University of Tulane or Pennsylvania, is quite by coincidence outside in the automobile. He is called in and discovers on examination some malignant growth about to render the victim blind, if not to affect his brain with insanity, in short order. To remove this growth a painless operation by means of radium must ensue. The doctor, being a humanitarian of the first water, will not charge a cent for the operation. The only cost to the patient will be the cost of the radium required.

This "radium" is carefully administered. Meanwhile, a piece of rubberoid tissue has been surreptitiously applied to the eye. After protracted massage of the eyeball with cotton-covered tweezers, the doctor calls on the patient's family to see how the liquid radium is pulling the cancerous growth out by its very roots and bringing it to the surface. Finally the tweezers carefully remove the tissue, which

THE PAIR OF MEN WHO USUALLY ARRIVED LATER TO SNEER UP ON THE OPERATION WOULD BE A "DOCTOR" AND A JUDGE.

is then burned because of its deadly properties, and a fee is collected of as large a figure as can be secured from the patient, who has been terrorized into parting, perhaps, with his last dollar, feeling that after all several hundred dollars is a fair price for so "marvelous" a cure or removal of the "cancerette."

A little later on, another man, or perhaps a pair of men, arrive to see whether the operation has been successful. One of these men is a "doctor" and the other a judge. They are representing the specialist who operated on the eye but who has since been killed in an accident. Before his death, however, he insisted that it be determined whether the operation was successful and if not that the money be returned. An examination reveals that "cancerosis" of the eye has developed in its most serious form, and unless something is done about it immediately, paralysis and probably loss of life will ensue. The one chance is to buy a rare type of electric belt invented by a German named Krupp, which, by giving off radium rays, will cure through correcting the condition of the blood. The belt is so valuable that a deposit must be posted, which will be refunded when the belt is returned. The deposit is obtained, and the belt may or may not be delivered. If it is delivered it is found, of course, to be worthless. If the patient negotiating for the belt lives in a town without adequate police protection, he may also be required to pay something for the insurance of the valuable article lest it be stolen while in his possession.

In the case of medical practitioners other means are employed to fool the public in return for gold. No federal law exists in the United States that is all embracing as far as the governing of medical practice is concerned. A state license is always required; but the requirements differ with different states, a fact

that allows one doctor to practice legally in one state but not in another. Some states require a college degree topped by a degree of Doctor of Medicine received from a medical school of good repute. It is becoming a more general practice of the state to investigate the character of the schools professing to teach medicine. In 1926 the Kansas City College of Medicine and Surgery came under the surveillance of the Supreme Court of Missouri and was condemned by reason of its qualifying neither as a college nor as a reputable school of medicine. But its "educational system" did not stop there. Years afterward the diplomas that were saved from the downfall sold for noble sums to any one who could pay the price, automatically transferring their possessors from every walk of life—farm hand to bank clerk—into full fledged M.D.'s. And the transformation was wrought by an ex-bartender in league with the ex-secretary of the Educational Aid Society and the ex-secretary of the Kansas City College of Medicine, who still retained a supply of diplomas even though he was then managing a filling station. Additional diplomas for those who aspired to more than one "degree" were obtained from similarly defunct colleges or schools.

Not until the "graduates" had operated for a considerable period of time and with notorious results were they apprehended.

The farm hand, Ali Yehi Debeh, posing behind his $2,500 diploma and license, had, for the sum of $500, guaranteed an arthritic cripple ability to stand up and walk within a week and a return to work within a month. A crude system of metal bands encircling the leg and attached to an iron brace was adjusted by thumb screws to stretch the leg straight. After a week of hideous suffering, gangrene led to consequent amputation of the leg by a reputable surgeon who was called too late to do more than operate.

When detectives arrested a suspicious looking individual in a St. Louis hotel, postal inspectors unearthed the whole story of the "diploma factory"; and on the grounds of using the mails to defraud in a conspiracy, the three men—Professor Educational-Aid-Society Lindsay, Assistant Professor Bartender Lindsay and Professor Filling-Station Alexander who had sold illegal medical and chiropractic diplomas in sixteen different states—were sentenced to three and four years each in Leavenworth penitentiary and prison. At least one practitioner, Ali Yehi Debeh, was imprisoned for a two year term for using the mails to defraud. Postal inspectors have estimated that the yearly income from the "diploma factory" amounted to approximately $50,000. Evidence shows that a total of $15,450 was received from "students" for their bogus credentials.

HEALTHGRAMS *from articles in this issue*

¶Toys are valuable objects only as they serve the two primary purposes: to amuse and to educate the child. *See page 1067*

¶Skin infections, no matter how small, are always dangerous. Only a *whole* skin is ever safe. *See page 1108*

¶Of Alaska's 14,000 Eskimos, at least 60 per cent have tuberculosis in either the incipient or the active stage, and in some sections of the territory the percentage is even greater. *See page 1099*

¶The boy athlete of today is overdoing in athletics, and too much is being expected of him. *See page 1088*

¶An urban and sedentary generation has sprung up. Appetites though still willing are less robust. *See page 1078*

¶The best place for a normal sex attitude to be developed is in the home. *See page 1128*

¶The man who loves his work always takes a busman's holiday, for there is never time enough to do everything he wants to do about his job while he is on it. *See page 1071*

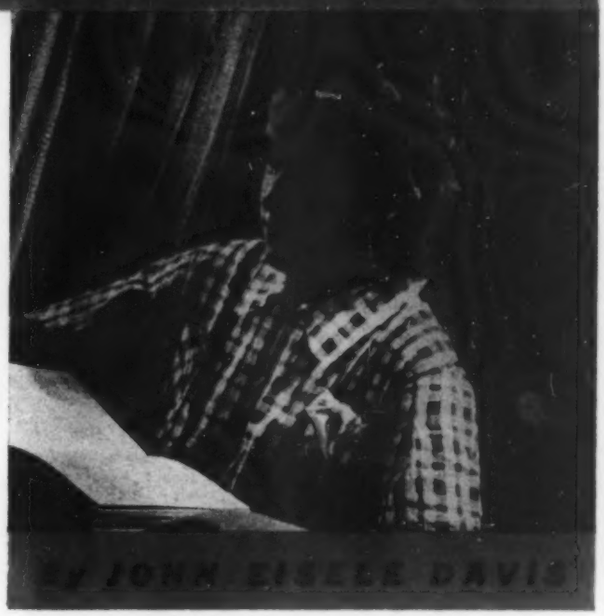
¶If the child is to receive a chance to develop the happy, disciplined and aggressive qualities so necessary to wholesome personality, one must determine his basic interests and find out what is valid and worth while in the child's own world. *See page 1117*

¶So closely related are your stomach and your heart that they are frequently confused when trouble in one or the other arrives. *See page 1103*

¶It is not as a destroyer of property or as a consumer of food but as a health menace that the rat does the greatest harm. *See page 1110*

¶Interrupted loud mechanical noise is more disturbing than continuous noise of the same type. *See page 1084*

To Every Child—A CHANCE!



By JOHN EISELE DAVIS

"I CAN'T UNDERSTAND why Jean acts so," complained Mrs. Jones. "He is so worrisome; nothing seems to please or satisfy him, and he seems so edgy and quarrelsome. I have discussed his conduct with the teacher, and she informs me that he is one of the brightest students in the class. He leads in many of his subjects."

"Does he really appear interested in his school work?" inquired Dr. Brown, whose realization and appreciation of the mental implications of health had made him a most understanding counselor.

Mrs. Jones was not sure Jean was really interested in his school regimen. Like all children of pre-high school age his interests were vacillating. Dr. Brown, however, insisted on finding more about this aspect of school and home adjustment.

In talking to Jean some significant things were brought to the surface. The boy did not like school. Dr. Brown found an undercurrent of protest against the school regimentation, which neither the teacher nor the parents could understand, since Jean was a bright student and met in a satisfactory way all the academic requirements. He was not happy, however, and Dr. Brown set out to find the cause. It became apparent, in the course of the friendly and cozy chat between the boy and the counselor that while Jean did well in the purely intellectual activities of the school this accomplishment did not fully satisfy him. Learning his subjects well simply opened a vista of further intellectual fields which he could neither fully understand nor hope to master. Such abstractions had no lasting and sustaining pleasures.

Jean confided significantly, "The teacher is always talking about my good marks in arithmetic, and the other kids laugh at me and call me a sissy. They don't think good marks make any difference. They're always teasing me because I can't play ball like they can."

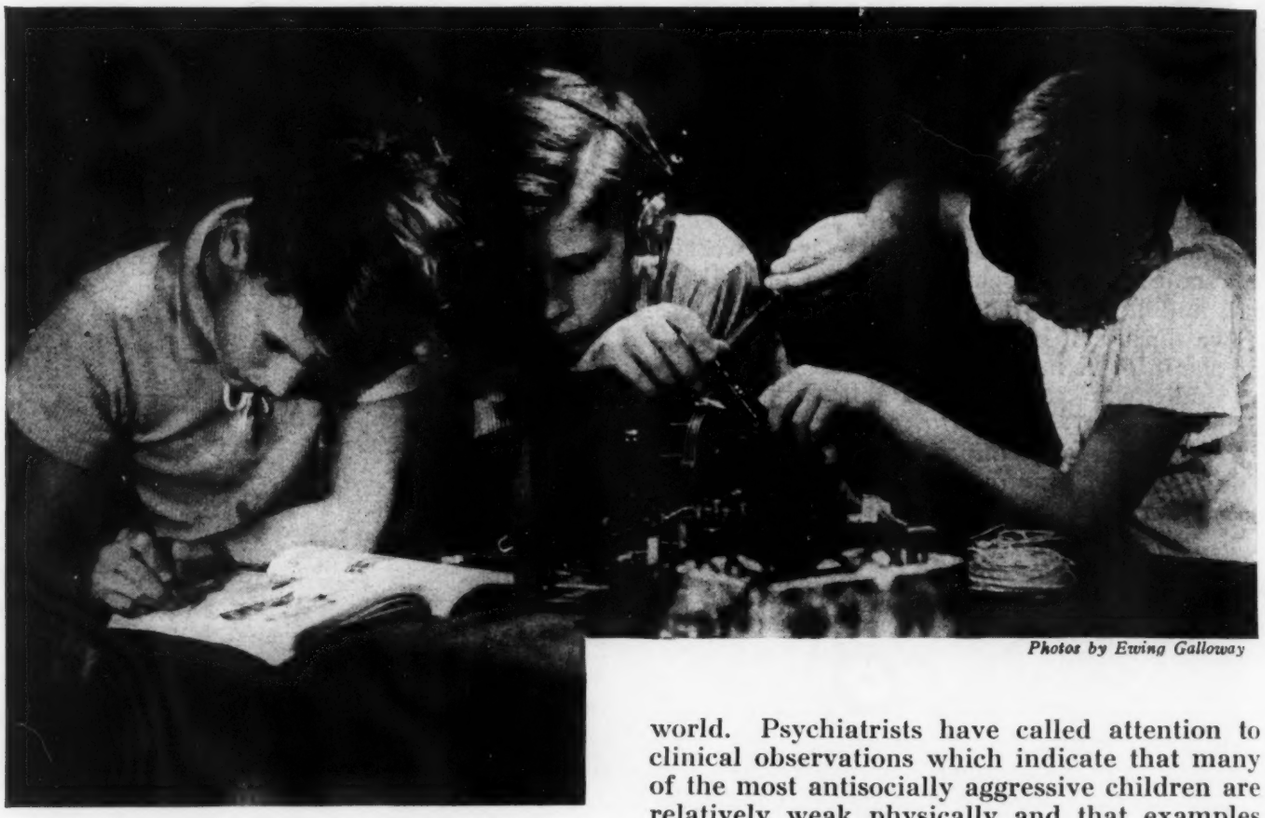
In her emphasis on conventional school requirements the teacher had become unmindful of the most important and serious obligations of education: to develop the confidence and security of the child in social as well as academic relationships, to make him feel that his personality is worth while and to teach him to love the world of people and things instead of fearing and evading it.

Psychiatrists are discovering in the child guidance clinics many similar cases in which teachers enamored by the intellectual progress of the child have become oblivious to many emotional maladjustments which advance subtly and cripple the child's faith in the inherent honesty of our educational system to fit him for the inevitable impact with the world.

The head of one of the largest and most progressive preparatory schools stated that the first responsibility of his school to the pupils is "to give them a place in the sun." All other educational objectives are secondary to this. The boy who can face life with confidence and a sense of security is fitted with the most elemental and basic substructure on which the other functions of education may develop. It is a most commonplace and drab educational aphorism to say that the child craves recognition and, while the modern home and school realize this obligation, they most frequently err in method rather than in direction.

Children are skill-hungry animals. Their most satisfactory expression comes from the growing recognition of an increasing control over their physical environment and over their own physical organism. While the old school system considered the development of the mind as superior to the development of the body, the child gains his deepest satisfaction from the development of the body, and such expression is invested with a higher validity by his playmates as well as himself. Thus one finds in the school adjustment of the child a most frequent conflict between the ideals of education conceived as conventional development of the intellect and the ideals of the child who wants to grow to be "big and strong" and be important in the eyes of his fellows.

Modern educators are making a careful study of these conflicting approaches to child edu-



Photos by Ewing Galloway

EVERY CHILD CAN DO AT LEAST ONE THING WELL, AND THIS GIFT IS HIS INALIENABLE RIGHT TO ENJOY. HERE THREE BOYS FIND PLEASURE IN THE CONSTRUCTION OF A SHORT WAVE RADIO SET.

cation and are coming to believe that once the basic interests of the child are determined, both the intellectual and the animal growth must be integrated to produce attitudes of confidence and worthwhileness and that this disciplined aggression, confidence and security are a most important contribution with which education can temper and direct the way for the child.

Mr. Smith, a graduate with high honors from a technical school, applied for a job and, meeting the technical requirements, was given a position. The work involved selling an engineering method and opened large possibilities for advancement. While Mr. Smith knew the details satisfactorily he could not radiate that infectious personality so necessary to put over a big proposition. The job analysis expert hit the nail on the head when he reported that Mr. Smith's education was sadly lacking. He had mastered the technical details but had been left with a feeling of social inadequacy. He had never been given a sufficiently important place in the sun to breed the qualities of faith in self, of confidence and aggression.

If the child is to receive a chance to develop the happy, disciplined and aggressive qualities so necessary to wholesome personality, one must determine his basic interests and find out what is valid and worth while in the child's own world. Psychiatrists have called attention to clinical observations which indicate that many of the most antisocially aggressive children are relatively weak physically and that examples of socially considerate aggression are more often found in children who are robust and physically healthy. The strong bully types are atypical. A strong, sound body provides the best medium for the development of a sense of worthwhileness and wholesome aggression, and education through the inculcation of organic health principles can lay the foundation for mental health.

The teacher and parent will be wise, however, to find out what the child thinks of the various objectives. The child catapulted into an adult world is confused about many things and particularly the competitive aspects of school education and the high values which the home places on the importance of being a winner. Intense business competition, keen social ambitions also contribute to an atmosphere of racy struggle in which the fighting proclivities of the child are most naturally aroused. The child learns to look on life as a struggle for dominance, for individual preferment instead of a social experience in which the highest satisfactions are attained by all rather than by the lone individual going forward.

An 8 year old child coming home from school was asked by her mother how she got along. "The teacher smiled at me and was nice to me," was the reply. In the child life these simple approaches of friendliness are the most important experiences. The teacher was laying the foundation for a happy and wholesome development of the positive qualities of rational

education. With a better understanding of mental health problems the emotional attitudinal training of the child is becoming the increasing concern of the teacher and parent.

Parents and teachers are realizing today that the child's composite picture of his experience is what really counts in determining his conduct. He selects certain things from his everyday surroundings and invests them with the respectability of worth and rejects or discountenances other things as of little or no value. The teacher, therefore, who is trying to build up the constructive attitudes of the child attempts to discover the child's level of appreciation and the specific things which are meaningful and especially dear to him while at the same time holding before him a happy and constructive pattern.

Teacher, realizing the hygienic importance of giving John "a place in the sun," emphasized vigorous physical activities in the form of group games as a means of developing wholesome attitudes of aggressiveness in which John was definitely lacking. These expansive activities were greatly enjoyed and, since he was a picture of strong constitutional stamina, he seemed suited physically for the severe exertion required. It was noted, however, that after playing but a short while, John would become irritable and quarrelsome and that there seemed to be an exceptional imbalance between his strong desire to play and his physical tolerance. On a check-up by the school physician it was discovered that the boy was not as strong as he appeared to be. The physician explained that any child's physical stamina, his ability to resist fatigue or to fight off infection, cannot be judged by his physical appearance. Many children appearing well nourished, muscular and in other ways the picture of health are easily fatigued and lack the vitality and endurance of other children who appear relatively puny. When John was given adequate rest periods and his play was conditioned to his motor tolerance as well as his interest, his recreation became a source of wholesome pleasure.

Mrs. Donaldson prided herself on preparing her son to be a man well able to cope with hard reality. She gave him a good technical education so as to provide the basis for a happy and aggressive personality by developing traits and potentialities which would give him a sense of being wanted as well as a sense of wanting, a feeling of social adequacy and worthwhileness. The mother was socially inclined and made much of her son's accomplishments in school as conversation in social gatherings and felt that this recognition would help in giving her boy the feeling of adequacy so necessary to one's fullest expression. The boy, however, was a student by nature and did not relish these extraverting experiences as his mother did. The attainment of social prestige was not his special gift. Finding the sustaining attitudes of aggression and confidence in his studies, he was more happily and wholesomely adjusted at this level. Psychiatrists call attention to the numbers who suffer conduct maladjustments due to the lack of the development of some special gift. This stabilizing capacity may be found in either the mental or the physical sphere, and the discovery of such associative integrating attitudes is an art challenging the interest and the methods of the school and home.

The parent who realizes the happy aphorism, "to every child a chance," will, above all, allow the child to be aggressive. Of all the traits of childhood, educators realize the primary place of disciplined aggression. It is most natural for the child to "reach to the sky," and many of these ill timed exploits and "out of the clear sky" reactions are most natural expressions.

One authority reminds us that the child is not bric-à-brac but a reaching, exploring animal living in a world of rebuffs as well as happy satisfactions. Many parents confuse the child in this unfolding growth by mistaking many of these aggressive actions as examples of unnecessary brusqueness, ill considered and even antisocial conduct. Psychiatrists call attention to frequent cases in which parents have mistakenly and tragically enveloped the child in a nauseating atmosphere of such restriction in the belief that they are tempering him for the hard realities of life. The child should have a chance to work out his problems in an expansive and modifiable setting.

Every child has something he can do well. This gift is his inalienable right to develop so that he can grow into a confident individual with positive attitudes which will vitalize his work and play and happily balance his experiences. This special gift must first be discovered, and the teacher or parent who finds it must be schooled in practicable things. The parent will learn from the teacher and the doctor the mental and physical capacities of the child; and from daily observation in the home the parent will learn the child's deepest interests. The child is no longer considered as a reservoir of knowledge but a dynamic unity of interests as well as capacity. He craves expression in an adult-made world, a world which he frequently considers to be unappreciative of his real worth. He wants to prove himself worth while, and the wise counselor will above all seek to enhance a wholesome feeling of adequacy, confidence, security and respect. "To every child a chance." Such a viewpoint does not belittle formal education. It seeks to integrate education into a larger and more comprehensive pattern of mental ability and physical development inspirited by an aggressive and confident attitude which places the child in an atmosphere of wholesome success. Here he feels he has a well deserved chance to do his best.

EXERCISE

The concluding chapter in a series on sports and sportsmen by **DUDLEY B. REED**

HORSEBACK RIDING is adapted to both sexes, nearly all ages and to assorted weights, for horses are assorted as to size, strength and serenity. A man who is a bit on the heavy side and who would find handball or tennis bad for his pride can find a big, strong horse which is yet several stages removed from the plow horse in activity and spirit, somewhat such a horse as Sir Launcelot used. For the youngsters there are ponies, and families can ride together like Lord Fauntleroy and his awe-inspiring grandsire.

In severity the sport is subject to wide variations. The man whose doctor advises for him none but mild exercise may ride a quiet horse at a walk, have somewhat more exercise and somewhat more fresh air than if sitting in a car without going counter to orders. The young man or the middle-aged man who feels young can secure all the exercise he wants by going forth on a strong, high spirited horse and venturing into gaits beyond the walk, for it is a misapprehension to assume that the horse gets all the exercise. Beyond peradventure he gets his share; but the rider of a trotting horse is not muscularly idle, especially if the horse is ambitious and shows a will of his own. Between these limits are many graduations. I have heard a riding instructor from Alabama charge a prospective rider with being a Northerner because he asked for a "walk, trot, canter" horse, the theory being that a Southerner prefers a five-gaited horse because there is less work for the rider. This is probably a libel.

Most riding is outdoors and in relatively pleasant surroundings. It is done in the country to a great extent and, if not, is practiced on bridle paths which pass through and between city parks. It is quite widely available and not extremely expensive unless one wishes to own one's own horses. It may cost $500 to buy a good saddle horse and $30 a month to keep him besides leather goods and insurance, but the country is studded (no pun intended) with stables which rent very good horses for from $1 to $1.50 an hour. Naturally there would be many advantages in owning your own, among them the emotional one of knowing thoroughly and loving the horse on which you rode; for not only is the horse the most important animal in history, but he shares with the dog the honor of being the most important animals in the affections of men. And this is far from strange. Gather together beauty, strength, courage, loyalty, intelligence and affection, and put them into the guise of a creature either four-legged or two-legged, and you have something to inspire affection.

And is there joy in riding? Is it fun? The answer must be an emphatic "yes." In this respect it must be ranked among the kings of sport as well as the sports of kings. There is the joy which inheres in many of the sports, the fresh air, the sense of well-being, the companionship of one or more persons, the quickened circulation; and there is also the very special joy that you are sitting on an animate thing which may not have a mind but does have a personality. No two horses are alike any more than are any two men. If the horse is your own he nickers when you come to his stall; his velvety nose pokes around your pockets for sugar; he nuzzles your hand. Even though he belongs to you for but an hour he has traits of his own, perhaps a will of his own, individual reactions to your seat and behavior or to papers blowing across the path. If you ride him it is necessary for your two personalities to reach some sort of an adjustment, and this

IS IT FUN? EMPHATICALLY YES, IS THE ANSWER. THERE IS THE JOY WHICH IS FOUND IN MANY SPORTS, THE FRESH AIR, THE SENSE OF WELL-BEING AND COMPANIONSHIP.

adjustment must be reached without his uttering any platitudes about the weather or expressing his tastes in words. Without words also you will need to impress your character and will on him. He may be unexpected, and unexpectedness between individuals is one of the things which makes for interest. If you meet a woman friend on the street, raise your hat and comment, "It's a lovely morning, isn't it?" and she replies, "Yes, isn't it?" you say to yourself, "She's a pleasant old girl." But if her retort should be, "It might be lovely, George, if your tie didn't scream at your shirt!" you leave her reluctantly for the 8:15 as you think, "She's a spicy young thing. I must see more of her." Undoubtedly this business of unexpectedness, either on the part of a human being or a horse, may be carried too far, and it should be the outcropping of naturalness without undue inhibitions rather than an artificial pose; but a person whose reactions to all situations and remarks are predictable falls somewhat short of the ultimate in interest.

A horse, then, should be unexpected but not too unexpected. Riding him differs from riding in an automobile more or less as sailing differs from motor boating. One is a sport and the other a means of transportation. Wind, too, is unexpected.

Furthermore, riding is an activity which can be learned perfectly well in adult life, as has been demonstrated by many men and women. It has some slight dangers but not as many as driving a car, unless the rider becomes overenthusiastic and undertakes to venture into the field of horse breaking. This job should probably be left to the experts, and you and I should ride horses which are well trained and regarded as safe by these experts. In this, as in other sports requiring skill, the best way to learn quickly and well is to secure instruction from a qualified teacher; but I might nevertheless venture on some general comments about how to ride.

It is customary for books and articles on equitation to begin with cuts and verbal descriptions indicating the anatomy of the horse in some such way as the parts of a hog are diagrammed and described in a work on meat packing. Doubtless this is desirable for one who wishes to talk *of* a horse with clearness, like a veterinary or a really "horsey" person; but it seems unnecessary for one who is simply going to talk *with* a horse or ride on him, for the horse probably doesn't know the terms anyway and will carry you just as well if you don't know the difference between pasterns and withers, hocks and hames.

Let us begin with choosing a horse, then, and even that might well be done by proxy. In other words, we'll assume that the rider is securing his mount from an instructor or a renting stable. In such a case the man who knows his horses and is an expert in riding and riders is the best person to select a mount suited to you in weight, strength and spirit, provided that you tell him the truth about your ability and experience as a rider, or perhaps even if you don't, for such men are quite used to the vagaries and deceptions of prospective clients. The story which is told with regard to riding skill depends quite as much on the character of the teller as on the facts. The confident "he-man" is likely to say when asked what kind of a horse he wants, "Gimme a real horse with some life. I've done a lot of riding," regardless of the truth. Another man of innate modesty who is really a better rider is likely to reply, "Well, I'm no better than a fair rider. I ought to have a quiet horse." The astute stable owner comments that he has just the horse, a real man's horse, turns and calls to a groom, "Charlie, bring out Speed." Thus the same horse, which probably doesn't deserve the name "Speed," is purveyed to either man and is doubtless a safe and sane animal. When a man has ridden from the same stable a number of times he tends, like water, to find his level, discovers two or three horses which are adapted to him and, as his riding improves, he may be promoted to better mounts. If he has an instructor he will probably be required to use different horses for the improvement of his technic.

There appear to be three different types of riding in common use in this country: western, military and park riding. Both in equipment and in riding method, the first emphasizes relaxation and comfort rather than style. It is adapted to the use to which it has been put, long hours of riding in uneven country. The large, deep saddle, the wooden stirrups, the cowboy boots, the chaps are all calculated to be aids to security and comfort. In this equipment the western rider seems to relax and ride rather loosely but with easy adaptation to each movement of the horse, and it must be admitted that he gives an impression of easy abandon which is pleasant to look on. The expert at this type of riding could probably ride well on any saddle, or even without any, but the average person who has learned to ride western horses with western equipment does not shift easily and with confidence to the flat saddle and metal stirrups used in park riding and largely in the army; whereas he who has learned to ride moderately well on a flat saddle can sink into the roomy western one with ease.

The military and park styles differ mainly in two respects; namely, the former teaches what is called the "forward seat" and a foot position with the toes turned out, and the latter favors an erect position of the body at all gaits and the holding of the feet parallel to the long axis of the horse. The advocates of these two styles may discuss, at times warmly, their relative merits. This discussion we shall regard as a private fight and not attempt to enter. It might be said, however, that the remarks which follow are not based on original investigation but on information received almost entirely from Mr. Louis Schulenberg, a teacher of the park style of riding with long and successful experience who happens to be the best teacher of any physical sport whom I have encountered personally.

Sometimes it is necessary to hold the horse or lead him. For these purposes, stand on the near side of the horse's head (his left side), place the forefinger of your right hand between the righthand and lefthand reins about 8 inches from the bit, and grasp the reins with the rest of your fingers beyond the farther reins and your thumb on the closer side of the near reins. If merely holding the horse, stand quietly and look forward and not at the horse. If leading him, walk forward pulling lightly on the reins and still not looking at the horse. For some reason it seems to make him nervous if you look at him.

For obvious reasons, mounting is easier if a third party holds the horse and also pulls down on the off (horse's right) stirrup as your weight comes up on the near one. In any case the rider's part is the same. He comes up to the horse's shoulder on the near side (the horse's left side), which is always used for mounting and voluntary dismounting. He takes the snaffle reins (the upper ones at the horse's mouth) in his right hand at the point where they are united and pulls them gently back toward the saddle and drops them on the horse's neck. Again with the right hand, he takes hold of the curb reins at the point where they are united, pulls them up between the snaffle reins and inserts the third finger of his left hand from above between the two curb reins, so that he holds one of them between second and third fingers and the other between third and fourth fingers. The curb reins should not be pulled up tight in this process. The snaffle reins are then picked up again with the right hand, and the farther one is placed between the first and second fingers of the left hand, while the nearer one is drawn through the whole hand, being outside the little finger. As each pair of reins is caught by the left hand the free ends are thrown over toward the off side of the horse around the first finger, and all four are held between the first finger and thumb. The horse's mane immediately in front of the saddle is now grasped between the free finger ends and the heel of the left hand. The rider faces toward the rear of the horse; with his right hand he turns the left stirrup about 90 degrees clockwise and puts his left toe *(Continued on page 1134)*

PARASITE TRICKS: X

GEORGE A. SKINNER *concludes his series on bugs that bother us by writing on venomous insects*

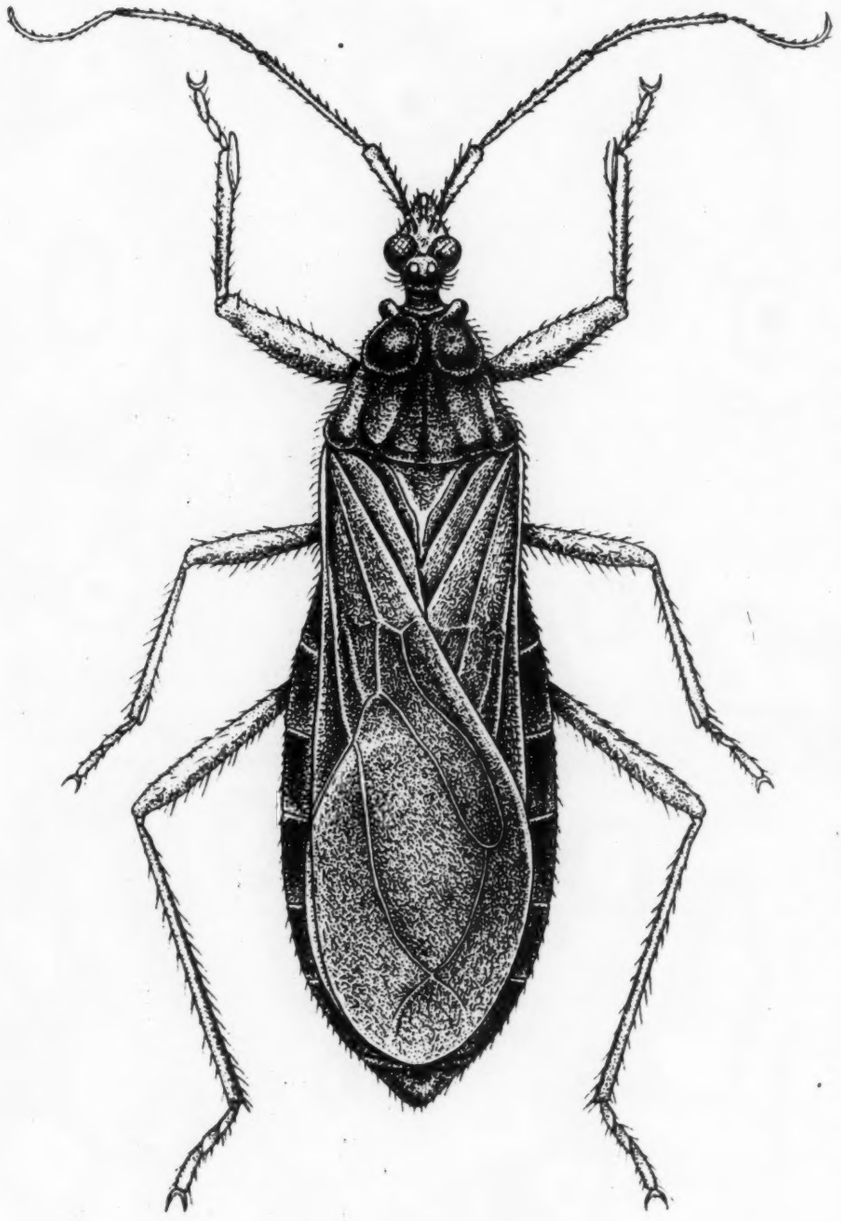
IN ADDITION to the poisonous properties that have been considered in connection with the various insects already described, there are a number of others that are of interest. Though not dangerous as a rule, the bites, stings or contacts often annoy by itching, stinging or burning, and sometimes general symptoms develop as the result of such contacts. Many of these venomous insects are commonly found in almost all communities, and some knowledge of their habits and how the effects of their presence may be minimized is worthy of attention.

The venoms or poisons are not slow like bacterial infections but are almost immediate in their actions. The composition of these poisons is exceedingly complex, and the chemistry is often not entirely worked out. In general, there are three varieties of poisons: The first (hemolytic) may act directly on the blood, dissolving the blood corpuscles. The second (neurotoxic) is a direct nerve poison, sometimes causing intense pain or paralysis. The third (hemorrhagic) produces swellings of the tissues around the wound and sometimes of the deeper structures by causing congestion, or the increased flow of blood to the part. Some venoms may contain two or even all three of these properties.

It is a curious fact that in some cases, such as in ants, bees and wasps, there are two substances, neither of which has much effect alone, but which when combined are quite severe in their action. One of these is acid, and the other is alkali; each is produced in a separate gland, and they combine in just the right proportions in the insect to produce the characteristic effects. Continued stings or bites at frequent intervals seem to produce marked immunity. Thus we see that the beekeeper is usually little if at all affected by bee stings, and those who have lived where fleas bite more or less regularly become gradually less affected as a rule until only the slight irritation of the bite or crawling bothers them.

The venoms are introduced into the body in several ways. We are all familiar with the bee sting and perhaps painfully aware of the ability of the wasp to inflict several wounds in rapid succession. Other insects bite or, more correctly, stab and introduce the poison by what amounts to a perfect little hypodermic needle. In still other cases there are irritating substances in the hairs or in the fluids of the insects, which blister acutely by contact.

Few precision instruments that equal that of the bee's sting have ever been produced by human skill. Certainly we all know how effective this weapon may be if we accidentally encounter an angry bee or wasp. In a general way, the sting consists of a sheath in which are contained two fine pointed darts. It is generally said that the point of the bee sting is the most nearly perfect point known. The stings or darts are made of a celluloid-like material found in most insects in their framework. This material is called chitin. It is highly resistant to all chemicals except alkalis and is tough and elastic. These darts have a little channel on the inner side, and when close together they form a tube through which the poison is ejected. At the end of these darts are barbed extremities, and the number of these barbs varies up to about ten. The barbs and sheath are connected to the poison glands, which make an instrument not unlike a needle attached to a rubber bulb. The poison glands are compressed by muscles to force out the poison, and the darts move back and forth with great rapidity, inflicting a wound into which the poison enters. In the honey bee the sting is broken off from the insect and remains in the wound. Other insects withdraw the stings but leave the poison. The darts are guided



THE "KISSING BUG" MAY FLY AGAINST YOU AT NIGHT IF YOU ARE IN THE VICINITY OF AN ELECTRIC LIGHT AND INFLICT A PAINFUL WOUND; OR IN THE DAYTIME YOU MAY SEE IT SCAMPER AWAY WHEN AN OLD BOARD OR ROCK IS SUDDENLY OVERTURNED IN THE GARDEN.

in their action by tiny guide rails, and the whole apparatus is most beautifully perfect. Usually it is only the females that sting, or else the workers, which are incompletely developed females. With some of the wasps the sting is used to paralyze worms or insects, in which it then deposits its eggs, and the eggs develop in the helpless victim, which is then devoured by the larvae as soon as they hatch. This provides an undecomposed food for the young by keeping the food alive but inactive until it is devoured.

Ants may inflict serious stings; and while they do not often attack human beings, they may do so and are sometimes quite destructive to animals, especially to young pigs. One such family of stinging ants is reported to kill many young pigs in the southwestern part of the United States every year and calls for much effort in its control.

Another ant, called the "velvet" ant on account of its woolly or hairy appearance, is often called the "cow killer." It is fairly common in central United States and sometimes causes a good deal of trouble for barefooted swimmers along the eastern Great Lakes. These ants may be half an inch long.

There are a number of venomous insects that ordinarily do not cause much trouble unless we accidentally pick them up when collecting flowers or when they fly against us. Sometimes such insects may inflict decidedly painful punctures. One of this class is commonly known as the "kissing bug" (Reduvius personatus), which is a good sized insect, often nearly an inch long and armed with a most admirable lance, which it can use with great rapidity and effectiveness. It is likely to be found under old boards or stones, and one may unexpectedly touch one when working around a yard and probably receive a severe sting or puncture, which is often very painful. These bugs are likely to fly against people at night, especially in the vicinity of electric lights, to which they are strongly attracted. As they sometimes sting the lips and cause much pain and swelling thereby, the name "kissing bug" became common. Late in the last century the daily papers became greatly excited about a new bug that selected the lips and cheeks as a point of attack. Dr. Le Conte says of the kissing bug:

> This species is remarkable for the intense pain caused by its bite. I do not know whether it ever willingly plunges its rostrum into any person, but when caught or unskillfully handled it always "stings."

> In this case the pain is almost equal to the bite of a snake and the swelling and irritation which result from it will sometimes last for a week.

This variety is not known to cause further harm than the pain, but others of similar species may convey serious diseases.

Another of these bugs (Lamus protractus), sometimes called the "China bedbug" may cause serious effects. Occasionally these insects are responsible for wounds attributed to spiders. Experimenters sometimes allow themselves to be stung by such insects or see the immediate results on some one else. An experimenter described the experience in the following words:

> In a few minutes after a bite the patient developed nausea, flushed face, palpitation of the heart, rapid breathing, rapid pulse, followed by a profuse urticaria [hives] all over the body. The symptoms vary in intensity with individuals.

In the southern and southwestern parts of the United States an insect commonly called the "big" or "giant" bedbug (Lamus sanguisuga) is frequently found in houses and inflicts a serious wound at times. It is a large insect, an inch or so long, usually black with red spots. Its bite is painful like that of the others and may be followed by general symptoms. Frequently the subsequent or continued effects of the bites of such insects are due not so much to the poison introduced as to germs which they accidentally carry around and which enter the wound at the time of the bite.

Really serious results follow the bite of another similar insect known as the Lamus magistus. This insect, which carries a form of infection known as trypanosomiasis, is found mostly in Brazil and lives in the straw-covered huts of the native population. It is like a giant bedbug in many ways, as it is more than an inch long and is a nocturnal blood sucker. It feeds on man and animals. Its bite is practically painless, and so it can feed for some time before it is noticed. There is no pain or swelling following its attack, but it introduces the parasites of Chagas' disease.

In 1909 many children in Brazil suffered from a disease that caused the most extreme anemia, followed by wasting and much retardation in growth. Many of them died. If they did not die in about a month, they became chronic sufferers. Such diseases had been known in Africa; but up to that time, none had been discovered in the western hemisphere, so it attracted much attention. A young medical student named Chagas studied the disease and finally allowed himself to be bitten by the insect that he thought was conveying it. This he did to prove conclusively whether his observations were correct. They proved to be absolutely so, but he lost his life in the experiment. The disease was named to commemorate this sacrifice. The same disease was later found in Peru, Venezuela, San Salvador and Argentina.

The trypanosome that causes Chagas' disease develops in the bug, which is also known as a kissing bug. It was formerly thought that when the insect bit a person on the face or lips the parasites were then transferred to the victim. Most observers think now that the parasites pass out in the intestinal discharges of the insect and are scratched into the skin, so introducing the infection. It is possible that this disease may soon be found in the southern part of the United States, as conditions seem favorable for the bug to live there as well as in South America.

When one is bitten or stung by the kissing bug, also called the "assassin bug," a little ammonia will do much to control the pain. But in view of the fact that more damage is likely to be done by the germs carried than by the bite itself, it would be well to disinfect the wound with an antiseptic such as tincture of iodine. This may often cut the length of the annoyance considerably. If the reaction is severe, prompt medical aid should be sought.

Children should be under screens when sleeping in the open where these bugs are known to be, and care in handling such insects is always essential. If they do get on the body they should be allowed to crawl until they can be quickly removed or gently disposed of, in order to avoid the effects of sudden movement. Apparently they act only in self defense or by accident.

Ticks may bite and remain in position feeding on a person for several days and not even be noticed. There is a considerable difference in the effects of bites from venomous ticks. The results of any tick bite may be serious from the introduction of dangerous parasites, but the bite itself may prove harmless. Then, too, some ticks have an exceedingly poisonous bite and may cause a marked general disturbance. Many accounts of tick bites are doubtless exaggerated and are often without foundation in fact. But some of the ticks have been carefully observed by trained entomologists and physicians, and such accounts leave no doubt that there may be really serious results just from the bite itself. One example will illustrate.

In Mexico and also in southern California a variety called pajaroello (Ornithodorus coriaceus) is common and is as much feared by the native Mexicans as a rattlesnake. All sorts of stories of the dangers of its bite are current, from the loss of an arm or a leg to death. Such tales were generally believed wherever the tick was found, until accurate investigations and experiments demon- *(Continued on page 1140)*

TO AMERICA'S SCHOOLS *Your Health!*

THANKSGIVING and Christmas go hand in hand with thoughts of good food, and so for December the radio program "Your Health" will go on the air under the enticing title "Let's eat."

But what shall we eat? Dietetic knowledge has gone forward at tremendous speed, threatening to leave most of us behind, unless we read volume after volume of scientific literature, give hours of thought to every meal and watch our dietetic behavior without ceasing. Or has it? Is there some fairly simple way in which the healthy person can be reasonably sure of an adequate diet and one which, at the same time, will taste like more? Fortunately, though research workers have uncovered an appalling array of facts about food, and dietitians and doctors must learn ever more and more about the composition and the values, the vitamins and the minerals, the healthy individual interested merely in eating wisely can leave the details to the scientists and concern himself with a relatively small number of basic ideas, which will serve him as a good guide in health. When he is ill or convalescing, of course, the doctor's orders must be sought, and all the diet rules for the normal person are off.

Let us, then, consider the programs to come over the air in December. The detailed outlines of factual material to be covered are to be found in HYGEIA for December 1937. Here we recapitulate only the high spots, namely:

LET'S EAT

December 14.—What Shall We Eat? A well rounded diet and how to get it.

December 21.—Hidden Treasures in Foods: More about a balanced diet in special relation to minerals and vitamins.

December 28.—Good Milk, Good for You: The production, transportation, pasteurization and home care of milk; its place in the diet; processed milks.

January 4.—Fool's Gold: Facts vs. fallacies in relation to false notions on diet.

And now, let us sum all that up in a few words—two, to be exact:

CHRISTMAS DINNER

Can the unhygienic, old-fashioned, excessive menu of the Christmas dinner represent the principles of a satisfactory diet? It certainly can, and does, unless you eat too much. For the simple principles underlying sensible, healthful eating are these:

Milk and its products should be a part of the diet of every child, and to a lesser extent, of every adult. It is abundantly represented in the festive menu, as are butter, cheese and the various dishes into which they enter as ingredients. That disposes of any possible chance of a lack of vitamin A or of calcium and helps also toward the supply of other vitamins and minerals.

Fruits and vegetables are essential to the good diet. They are to be found in the menu in liberal amounts, especially cranberries, apples and citrus fruits. They may be in the fruit cocktail, the salad, the turkey stuffing and the pie, or they may be eaten raw as a light dessert. Some are cooked, some uncooked, according to the principles in vogue in the best dietary circles. That removes any worry about vitamins B_1 and C and helps toward furnishing vitamin A. It supplies minerals to supplement the milk.

The body requires proteins—meat, eggs, fish, cheese and vegetables like peas, beans or lentils. Proteins too may find their place in the Yule repast, masquerading, of course, as turkey or fowl or roast, or disguised as au gratin vegetables or potatoes, or hidden in the stuffing which is made with eggs, or in custards. The vegetables may even be served boldly, buttered or creamed.

For energy, the carbohydrates and fats are needed, and here we find the place for breads, butter, pastries, ice cream, plum puddings and other desserts and the bit of fine candy to furnish the last sweet bite. Nuts contribute their bit of fat and protein at either end of the meal.

Acme

Christmas Dinner: A drama in three acts—Anticipation—Realization—Satiation.

Relishes augment the supply of raw food, and in the case of olives, supply fats.

You are invited to listen to the radio programs each Wednesday at 2 o'clock eastern standard time for illustrations of dietary dilemmas and delusions and how they can be avoided. And when you come to planning the Christmas feast, you can do it with a clear conscience that it has the full support of dietary science, from soup to nuts.

[NOTE.—Don't overlook the broadcasts on "How to Live," which will be given on the following dates: November 23.—Weather and Wearing Apparel. November 30.—Rest, Relaxation and Recreation. December 7.—Tuberculosis and the Teens.]

SCHOOL and HEALTH

Conducted by J. MACE ANDRESS, Ph.D.
67 Clyde Street Newtonville, Mass.

CELEBRATING THE RETURN OF THE SUN

AGAIN the Christmas season is with us! In northern climes the snow may be sifting down through the trees. Boys and girls with joyous laughter pelt each other with snowballs. There is coasting on the hills; wreaths of holly are on the doors; candles are in the windows; Christmas trees are loaded with presents; tables groan with goodies, and a spirit of good will is in the air. In the distance is heard the chime of church bells. Men, women and children have a new light in their eyes as they greet each other with "Merry Christmas." In distant lands and climes, people are celebrating Christmas in their own way. To most of us in America it is the great festival of the year!

The Christmas season offers many an opportunity to the teacher to inculcate lessons of charity and kindliness and the doing of good deeds. In many cases this spirit will continue through the year.

Christmas is the symbol of light and cheer! Its spirit to some degree was in the world long before the birth of Jesus Christ. The roots of the Christmas observance go deeply into the folklore of the Druids, Scandinavians, Romans and Egyptians. Since the earliest times many inhabitants of the world have noticed that this is the time of the winter solstice when the sun, the parent of fertility, begins to rise over the world with renewed vigor and power after having been at the lowest point in the heavens. It was believed by some that the sun actually stood still for forty days. Probably this belief was based on the phenomenon of the midnight sun. The sentiment for the return of the sun was expressed by some in the words of "When the earth began to waken under the kiss of light, when new hopes arose in frozen hearts."

In many different lands the return of the sun was celebrated with great rejoicing. Among the Jews this period was the Festival of Lights or Dedication called Hanukkah. In Scandinavian countries the people built great fires to defy the Frost King. Around these fires they gathered to warm themselves and drink great horns of mead in anticipation of the days to follow when with the return of the sun the ice might break up and they would again embark in their ships bound for discovery and adventure. This season was observed by the Druids in their great roofless temples, now ranked among the wonders of the world. At Stonehenge in England, torches blazed, and there were elaborate ceremonies centering around the mistletoe. The interesting custom of kissing under the mistletoe had its origin at this time. Older than recorded history was the beginning of the great Roman celebration called Saturnalia. According to legend, Italy had its golden age during the reign of

Keystone View Company

MANY CENTURIES AGO PEOPLE CELEBRATED THE TIME OF THE YEAR WHEN THE SUN BEGAN ITS RETURN TO THE NORTH HEMISPHERE. TODAY AT THE CORRESPONDING TIME EVERY YEAR WE CELEBRATE CHRISTMAS.

Saturnus. Peace, happiness and innocence abounded. Saturnalia, in honor of the great Roman deity, was not a day but a whole season of celebration from December 17 to 24. It was a time when people and senate were expected to present New Year's gifts to the emperors. Convention was relaxed, and the people gave themselves up to wild joy. For the time being, rich and poor were equal. There was no distinction between slave and freeman. Courts were closed. There were no convictions for crime. Processions, singing, lighting candles, adorning the house with laurel and greens, giving presents, feasting and general merriment dominated the season. When Augustine landed in Britain in 592 A. D. he found that December was a festive month. The followers of Mithras, who was worshiped as a divinity in the centuries preceding and following the beginnings of Christianity, referred to this period as *sol invictus*. It represented the victory of light over darkness.

When the Christian church decreed that December 25 was to be celebrated as the birthday of Christ the western world had already begun to think of that approximate date as a time of great festivity. It was easy therefore for the Christians to accept the idea of Christ as the Sun or Light of the world, and also to carry over to their celebration some of the practices that had been handed down from the past.

The history and traditions just reviewed might be told to children to emphasize the place that the sun plays in the life of the whole world, and how it promotes good health. In the North the attention of the children might be directed to the fact that sunlight enables the skin to manufacture vitamin D, so necessary for general good health and the development of the bones and teeth. This might well lead to the problem of getting sufficient sunlight during the winter months and the importance of eating foods like butter, cream and egg yolk which contain this vitamin. It would be an appropriate time also to tell children about the value of cod liver oil which may take the place of the sun during the winter months that follow Christmas.

It is possible then for teachers and pupils as they enjoy the Christmas season to realize that through many centuries, going back even to prehistoric ages, it was customary to celebrate the return of the sun. They may enjoy and profit from this heritage as well as participate in the friendly spirit of rejoicing and of displaying good will toward one another!

Developing a Normal Sex Attitude Through the Study of Biology

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The development of a wholesome attitude toward sex is now recognized as one of the major problems in education, but there is a lack of unanimity as to how this is to be brought about. In the following article a trained biologist, who has spent several years working on a program of individualized instruction in sex education, gives us the benefit of his experimenting and teaching. This is a challenging article.

THE best place for a normal sex attitude to be developed is in the home. Before the onset of puberty the child should know the facts of human reproduction, since it becomes more difficult to consider these questions normally after that period. In a practical sense, however, this is not being done, and it will not be done until the present generation is given a normal point of view on the subject. We have then an abnormal situation out of which a normal one must be made.

Sex facts are not out of the ordinary. We observe them frequently in the forms of life about us. The best way to teach them is in their normal subject matter environment. In the lower grades this would be nature study while in the ninth or tenth grade it would be biology. A carefully outlined program that will present the material in a developmental manner and present the facts as they exist in the science of biology, and not the concepts that exist in popular literature, is absolutely essential. When the facts are thus presented, they rob the student's mind of the smutty facts gleaned from backyard conversation and of any expectancy of feeding a libidinous curiosity. The information should not be sprinkled along the way throughout the year, but as with other important biologic concepts, it should be taught as a unit built around the concept that all life comes from preexisting life. If this unit is taught on an individualized plan of instruction, the results are more effective, and individual sex problems can frequently be solved. With careful planning, individualized instruction, not private tutoring, can be accomplished even with relatively large classes (forty students).

A carefully outlined program is not in itself a guarantee of successful sex instruction. Other factors aside from subject matter and organization are important. These conditions, as observed mainly in tenth grade instruction, are presented briefly in the form of guiding principles in the paragraphs to follow:

Spring is the most desirable time of the year to give sex instruction. The students are motivated in their study by a natural curiosity regarding the new life that comes with this season. The environment is abundant with material for illustrating the principles involved. The teacher who does not make use of such material is indeed missing a rare opportunity. However, he should not formalize this observation of nature but through his own interest draw the student's attention to the interesting environment.

In order to give an exact presentation of the principles of sex and to prevent an undue arousing of the emotions, a scientific vocabulary is necessary. This vocabulary must become a natural part of the student's everyday language and must in no way impress him as being stilted. The teacher should carry out such group activity as will give natural drill in the use of new words.

Need for emphasis on vocabulary suggests another principle. For the success of sex instruction it is essential that the proper mental and social atmosphere be maintained among the members of the class. Because of the traditions of taboo, the average individual has developed undesirable behavior patterns. The common reaction to things sexual, for example, may be one of the following types: obscenity, prudishness or secretiveness. Sex as found in nature need not bring about these reactions. Teachers must be alert to prevent the occurrence of any of these attitudes. It is the teacher's business to build healthy minds. This can be done by facing reality frankly. Obscenity, shyness or secretiveness will prevent the realization of this end.

The teacher's attitude toward his students should be easy, proper and wholesome. Nothing can be so harmful to the mental health of students or to the sex program as borderline smuttiness on the part of the instructor. In formulating the ideals of his students the personality of the teacher, his method of instruction and the degree of confidence which the children repose in him are more important than what he says. An uncertain, hesitant, timid soul cannot teach the facts and ideals of sex. The

material must be presented with sincerity and conviction. The instructor should consistently be strictly truthful in all statements, eager to encourage and answer frankly all legitimate questions; careful to distinguish fact from fancy. Such attitude and presentation come only as a result of mastery of the subject and the development of high ideals. It is therefore important that the instructor be well read in the fields of reproduction, embryology, sex hygiene and heredity. He should also have a rather thorough knowledge of the sex superstitions of the day so as to be able to point out the fallacy involved in any one of them.

The instructor for the sex education program should be the regular teacher of biology. This practice may be altered but should be done with great caution. An outside person may have the necessary information as to the physical aspects of sex and heredity but may lack entirely the psychology needed for presentation. Special professional training is required, both in manner and in method, to fit teachers to give this instruction.

The biologic phases of sex instruction should be an integrated part of biology. Emergency sex education should not be dealt in; do not have special lectures, occasional talks, sex hygiene exhibits or pamphlets. These only tend to arouse unhealthy emotions. Such lectures result more frequently in instigating brooding, morbid thoughts and fears than in giving cheerful, healthful information that will lead to safe and moderate action. On the whole, more harm than good is done by such devices, since the mind has not been properly prepared beforehand.

Instruction in regard to venereal diseases should not receive abnormal emphasis. As much information should be given regarding the social diseases as is generally given about such diseases as cancer or tuberculosis. The chief appeal regarding these diseases should be an ideal of self realization and the altruistic concept of sympathy. The student should be made to recognize his responsibility to the group, so that he, through his behavior, may not make others suffer.

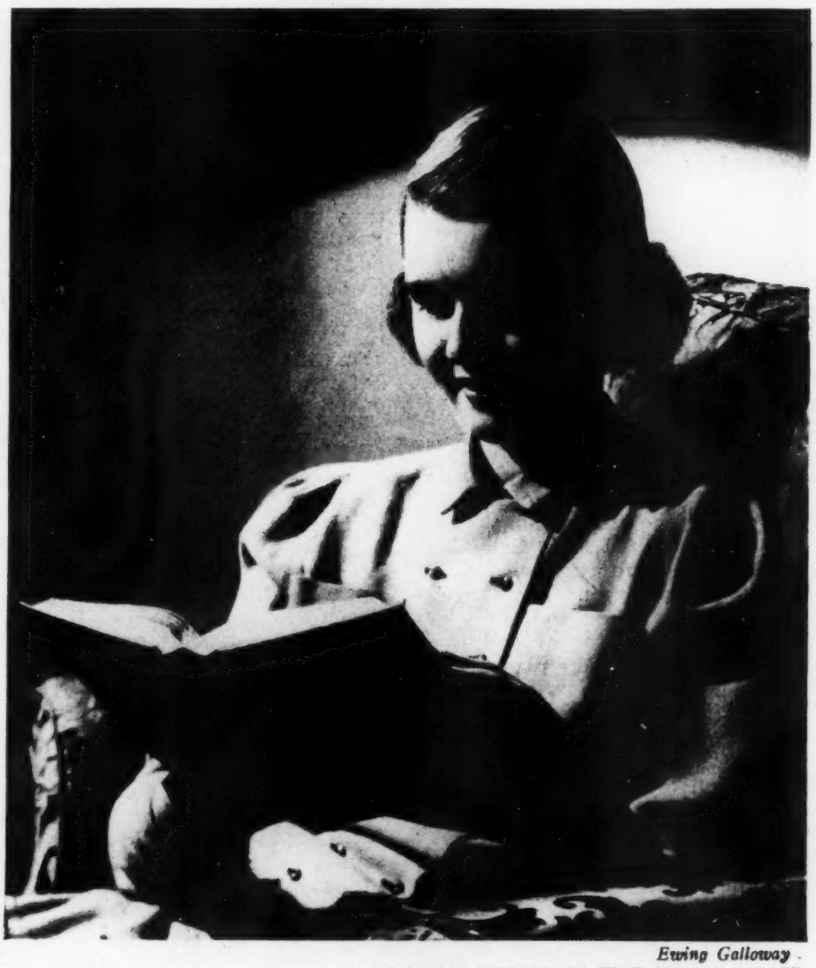
Sex instruction must definitely and unequivocally teach about human reproduction. The reproduction in flowers and insects is entirely inadequate. The idea that a student will carry over information on the reproduction of the lower organisms and apply it to his own group is a myth. Furthermore, to take the student part way through this intensely interesting story of reproduction is tantalizing and unduly arouses the emotions. Where the entire story is presented in a matter-of-fact way, a natural situation is maintained.

When it has been decided to introduce sex instruction no public announcement should be made to that effect. The principles involved in this instruction are laws of nature. They should be treated as such and not be given "side-show" advertising.

The sociologic aspects of sex instruction should be integrated with other phases of the school program. Subjects that are especially suitable for such integration are home making, physical education, literature and social science. These departments should emphasize the spiritual aspects of sex relationships as shown in the family and society. The finer values of the home and the family should be stressed, as should the need of right behavior in the entire relationships preceding marriage and the home.

A good extracurricular program is a necessary factor in a school-wide sex education program. Activities should be inaugurated for the entire school so as to use the principle of dominance in regard to bodily energies. The extracurricular program must take care of a well balanced plan of activities. It must include every student to the extent of his time available for such activity, and it must be adapted to his abilities. Too frequently we find these activities usurped by a few of the bolder personalities, while no attempt is made to entice the less forward student to take part in the program. Yet too often these timid people become serious sex problems.

Such a program of sex education as outlined will realize the constructive objectives previously outlined and will not turn out to be a series of "smut sessions." A more normal attitude will be developed toward the beautiful phenomena of sex; more marriages will be consummated as a result of *admiration appeal* and less on the basis of sex appeal; and what is more, the present generation will be able properly to instruct their offspring. Instead of abnormal sex attitudes and sex degeneracy our social order can evolve an attitude toward sex like that toward any other normal human activity.



Ewing Galloway

A SCIENTIFIC VOCABULARY MUST BECOME A NATURAL PART OF THE STUDENT'S EVERYDAY LANGUAGE.

Little Journeys Among High Schools: IV

Health Teaching Through General Science

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The up-to-date high school program today seeks to introduce health teaching naturally and effectively through the different subjects of the curriculum. Miss Latimer reports here on her observations in the teaching of general science.

IT HAS been said, but it will bear repeating, that usually the general science curriculum is best built on the assumption that the educational growth of a child is best served if the teaching program in the content field is organized around important centers of interest of varying types, which are selected from the environment and from the experiences of the children and enriched by organized knowledge.

It is obvious that such a conception of the science field offers possibilities for health teaching. The introduction of its facts and principles offers opportunities for developing a scientific attitude toward health facts and principles.

For some years I have been interested in seeing just how health teaching at the junior high school level was being integrated into the general science curriculum. At first I found far from satisfactory health teaching situations. The teaching lacked definite organization: The objectives were vague; the learning by inference was not clear, and in some instances health relationships were overdone and far-fetched.

But health teaching through general science has improved. Not long ago I listened in on the first day of the development of a unit termed "How Health Knowledge Grows." I heard an excellent preview given by the teacher and a well directed informal discussion.

As an approach the class was asked to tell the health superstitions with which they were familiar, such as:

1. Fruit and milk taken together curdle in the stomach and poison the blood.
2. Cutting your hair at the time of the new moon makes it thin.
3. Wearing red flannel underclothing keeps away rheumatism.
4. It is necessary to take sulfur and molasses in the spring to thin the blood.

The teacher asked the class to test the truth of each statement by answering the following:

1. Is the statement based on fact?
2. Who is the authority?
3. Is it contrary to known scientific facts?
4. Do you know examples in actual life situations which counteract such a statement?

That some health superstitions often hold an element of truth, though incorrectly interpreted, was brought out by one girl who said, "I guess if we kept warm by wearing adequate clothing, we high school girls wouldn't get chilled quite so often, which might make us less susceptible to some diseases. But we don't have to wear red flannel underwear!"

Alice Carter contributed this thought: "We need to have minerals in our diet all the time; but we should secure them in vegetables, eggs and other foods rather than by taking sulfur and molasses."

After a short interval I again dropped in on this group and found them considering such problems as the following:

1. Scientific health knowledge does not stay put but is constantly developing.
2. What are the qualities of a scientist; how does he think and act?
3. May high school boys and girls learn some of his methods?
4. Have you ever heard of scientific research?
5. Why should health beliefs be founded on research?

Young Arthur Brown said he had decided he wanted to go into medical research; but from the way the fellows down at the Rockefeller Institute were finding out things he doubted whether there would be anything for him to discover. However, he was reassured by a more thoughtful member of the class that in all probability there would be enough problems left to give him an opportunity for a contribution.

In another school, in the comprehensive general science unit "Air and Man's Use of It," the setting was given for emphasizing health relationships by conducting before the class simple experiments for oxygen and for carbon dioxide. Also a test was made showing how evaporation affects temperature. Discussions were developed as to how water is carried in the air, how dust is carried and the relative health importance of physical versus chemical conditions.

The pupils investigated the school ventilating system. A committee of pupils took charge of the reading of the thermometers throughout the school and their recording on charts posted in each classroom.

The class visited a nearby factory to investigate its system of ventilation and also a department store where air conditioning was installed.

The last part of the study was related to personal problems:

1. How is your home ventilated?
2. Do you keep a record of temperature?
3. How do you ventilate your bedroom at night?
4. What is the relation of fresh air to sleep?

Some time later I visited another school when the general science class was developing a unit termed "Water and Man's Use of It."

Tom Reynolds gave a report on the history of water from the time it falls as rain until the time one drinks it. He brought out such important points as the difference between surface waters and ground waters. Another boy had made a diagram for drilling a deep well. This of course took in the dangers in the environment for contaminating the water.

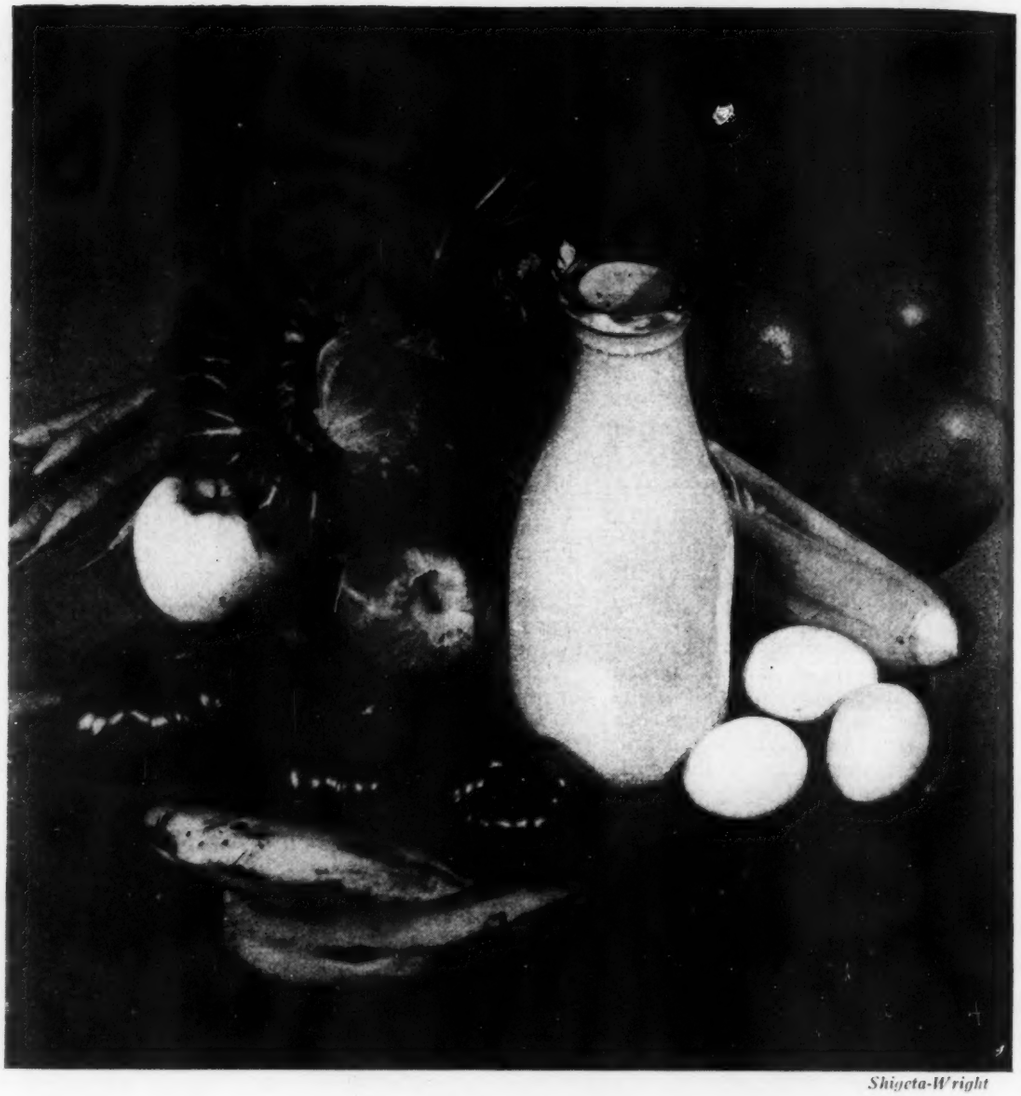
Later the teacher and class planned on having a member of the state board of health talk before the group on how he tested for a pure water supply.

Recently I watched a science instructor develop a new interest in the various food elements by conducting simple classroom demonstration tests for starch, sugar, fats and oils, proteins and minerals. My thought as I left this school was on how much better it was for pupils to learn from first-hand experiences what elements certain foods contain than to get such facts solely from books.

In the general science course, considerable attention is given to "Light and Man's Use of It." I was considering what health implications might be found in such a study when I happened to meet a teacher who told me that it had furnished a valuable immediate background for a study of the eye. The study of the camera and the making of photographs had led to an interest in knowing more about the parts and operations of the human eye.

The mechanisms of telescopes and microscopes are not far removed from eyeglasses. I visited this group and heard the discussion of such various optical instruments lead to a consideration of how the wearing of eyeglasses may help correct one's vision.

I found that even health facts about proper clothing could be included in the subject matter area of general science. Last spring I observed a class working on the study of radiation, convection and conduction, considering such problems as:



FROM FIFTEEN TO TWENTY SERVINGS OF MOST OF THE COMMON FRUITS AND VEGETABLES ARE REQUIRED TO YIELD THE CALCIUM EQUIVALENT TO THAT CONTAINED IN ONE PINT OF MILK.

Shigeta-Wright

1. What is meant by warm clothing?
2. How does clothing affect the temperature of the body?

Sarah Connolly read a list she had made of the various types of clothing most effective in preventing the body from losing its heat too rapidly to the air. Experiments were conducted to demonstrate with black, red, white and blue cloth both the cooler and the warmer colors.

For supplementary reports the home economics teacher had been asked to help pupils in making a study of the most suitable materials for wraps, underwear and bed clothing for both summer and winter.

While most health education authorities agree that direct organized health instruction is needed in the junior high school, nevertheless much enrichment can and should be given through the general science course. The foregoing observations have strengthened my convictions along this line.

Food Experiments for the Classroom: IV

Mineral Elements or Ash

ETHEL AUSTIN MARTIN
Director of Nutrition Service
National Dairy Council

Boys and girls enjoy the adventure of performing experiments, as all teachers know. Our readers are again indebted to Mrs. Martin for carefully prepared experiments on the testing of some of the common foods. This time it is a test for minerals. In trying these out with your classes note the bibliography at the end of the article.

THE body requires mineral elements for growth, repair and regulation of body processes. Important among the many mineral elements is calcium. It helps to make strong bones and teeth and regulate the beat of the heart, and it is essential in the process of blood coagulation. Phosphorus, iron and copper are other mineral elements which should be included in the study of food values. Phosphorus combines with calcium to make bones and teeth. Iron is a necessary constituent of the hemoglobin of the blood, and copper plays an important role in the formation of hemoglobin. Fortunately, iron and copper are usually found together in foods.

Mineral Elements in Foods

The accompanying photograph shows a group of protective foods which are good sources of mineral elements. Our chief source of calcium in food form is milk. Milk is also a good source of phosphorus. Fruits and vegetables, as a group, are important sources of mineral elements. The green vegetables are especially rich in iron. Those containing the largest amounts of iron are lima beans, beet tops, broccoli

leaves, chard, chives, collards, dandelion greens, kale, mustard greens, parsley, spinach, turnip tops and watercress. Certain fruits are rich sources of iron, especially in dried form: prunes, apricots and peaches. Vegetables and fruits should be considered supplementary to milk as sources of calcium in the daily diet. From fifteen to twenty servings of most of the common fruits and vegetables are required to yield the same amount of calcium as is contained in one pint of milk.

The consumption of vegetables and fruits has increased rapidly since the beginning of this century. This is particularly true of canned vegetables, such as corn, peas and tomatoes. More recently, improved methods of preserving foods by quick freezing have increased the consumption and enjoyment of fruits and vegetables at all seasons of the year. It is estimated that the average annual consumption of vegetables is now around 300 pounds per capita. Improved methods of distribution, including refrigeration and long-distance shipping, make it possible for large city markets to receive fresh vegetables and fruits daily from Arizona, California, Florida, Texas and other sections of the United States.

Many Types of Vegetables

Vegetables are classified under the general headings of seed vegetables; leafy vegetables; bulbs, roots and tubers; and flowers, buds and stems. Seed vegetables include the legumes (various kinds of beans, peas and lentils) sweet corn and the seed-pod vegetables such as string or snap beans, green and red peppers and okra. Bulbs, roots and tubers are those grown under ground and are economical sources of many nutritive elements. In the bulb type of food are Jerusalem artichokes, leeks and onions; the root vegetables are beets, carrots, parsnips, sweet potatoes and turnips. While the white potato classifies as a tuber, it is really a thickened stem and does not belong to the same family as the sweet potato.

The leafy vegetables constitute the richest source of iron among the vegetables. For this reason and also because they furnish relatively few calories in proporton to their bulk, they have an important place in the diet. Because of their bulk, leafy vegetables also serve an important laxative function.

An interesting fact about the leafy vegetables is that the leaves contain far greater quantities of mineral elements than the buds or stems. In broccoli, for example, the leaves contain four times as much calcium as the flower buds. Cauliflower, broccoli and French artichokes are the most important examples of flower or bud vegetables.

How to Get the Most Minerals from Vegetables

Eating vegetables raw is the best way of getting *all* the minerals present. When the vegetables are cut up and cooked in water, some of the mineral elements dissolve out into the cooking water. These minerals are lost unless the cooking water is used. This fact emphasizes the importance of either eating vegetables raw or cooking them only a short time. When cooked just the right amount, vegetables taste better and appear more attractive. By serving them hot and well seasoned with butter and salt, one is tempted to eat more of them. Therefore, every method of making vegetables appear more appetizing contributes indirectly to a greater consumption of minerals from vegetables. Another way to safeguard mineral losses in cooking is to pare vegetables thin and to use the cooking water for soups, sauces and gravies, thus salvaging some of the minerals which otherwise would be lost.

Application to the Classroom

Ash is left when food is burned, just as when coal is burned. The ash of foods is made up of different mineral elements, and the amount of ash differs in various foods. Some foods contain relatively large amounts of ash. Others, such as the refined foods, have almost none. The ashes of different foods are composed of different kinds and amounts of mineral elements.

Two series of experiments are suggested here, one for testing the presence of ash in foods and the other for testing one particular type of mineral element in ash. Vegetables are used chiefly to show the positive test for ash in foods. This has been done merely to make the application to the preliminary discussion. Many other natural foods may be tested and will indicate the presence of ash.

Experiment with Ash (1)

Problem

To test foods for mineral elements or ash.

Materials

Salt
Spinach
Potato
Lettuce
Cornstarch
Sugar
Carrot
Dissecting needle or forceps
Bunsen burner or other flame
Tripod
Asbestos sheeting or sheet iron

Seventh Experiment

Place about ¼ teaspoonful of salt on a piece of asbestos sheeting or sheet iron. Try to burn it by heating it with the Bunsen burner. Salt does not burn at all and therefore is composed entirely of ash. Shred or chop about 1 teaspoonful each of spinach and lettuce, and test in the same way. Repeat for the same amounts of cornstarch and sugar. Place a small piece of raw potato with the skin on it on a dissecting needle or hold it with forceps. Burn it in the flame until nothing more will burn. Test a piece of carrot in the same way.

Results

Salt does not burn, showing it is composed entirely of ash. The small amount of material left when spinach, lettuce, potato and carrot are burned is mineral matter or ash. The still smaller amount of material left when sugar and cornstarch are burned is not ash but carbon which cannot be burned up entirely by the method suggested here.

Conclusions

A simple test for ash is to burn the foods, and usually if there is some material left which will not burn, it is the mineral matter or ash.

Note to Teacher

All except highly purified foods such as cornstarch and sugar contain some ash. If a school has a well equipped chemistry laboratory, high school students or a teacher may demonstrate to the children that sugar can be completely burned up under proper conditions of heating but that other foods, carrots, for example, have a true ash.

Application to Upper Grades

Older children will enjoy going a step further with the foregoing experiment by examining the ash left by the various foods. They will be interested to note, for example, that carrot leaves a dark ash and that spinach leaves a gray ash while the ash of lettuce is fine and white.

A problem still more advanced for older children is a test for a specific constituent of the ash, for example, calcium. This test calls for greater concentration and skill than the seventh experiment.

Experiment with Ash (2)

Problem

To test foods for calcium or lime.

Materials

Table salt
Milk
Curd of milk
Solution of calcium hydroxide (lime water)
Test tubes
Platinum wire sealed in end of glass rod
Bunsen burner or other flame

Eighth Experiment

Make a small loop in the end of a platinum wire. Heat the wire in the top of the flame. Note the blue

(Continued on page 1155)

EXERCISE

(Continued from page 1122)

through it, resting the ball of his foot on it. Next he grasps the rear of the saddle (cantle) with his right hand and pulls himself up with the aid of his two hands and left foot until he is standing in the stirrup, shifts his right hand to the front of the saddle, throws his right leg across the saddle, sits down and inserts his right foot into the right stirrup from without inward. It has taken some time to tell it but less to do it, and he is now mounted.

Dismounting is practically the reverse of mounting. After stopping his horse the rider takes the reins in his left hand as before, grasps the mane with it, puts his right hand on the pommel, swings his right foot around over the horse's back until it is beside the left, at the same time moving his right hand to the cantle of the saddle. He then lowers himself so that he places his right foot on the ground while facing toward the near side of the horse. Finally he removes his left foot from the stirrup and puts it also on the ground. The military method of dismounting is the same up to the point where the rider is standing in the stirrup with feet together and hands grasping the mane of the horse and the cantle of the saddle. It then differs in that the rider supports his weight on his hands while he disengages his left foot from the stirrup and slides to the ground with both feet together. The latter method seems to have an advantage in eliminating a possible awkward situation if the horse should make a sudden move while one of the rider's feet is in a stirrup and the other on the ground.

If the rider sits in the saddle and lets his legs dangle at ease, the stirrup should be adjusted so that its lowest part is opposite the prominence of the inner ankle bone. This length can be approximated before mounting by placing one of the stirrups snugly into the armpit and measuring along the extended arm. The stirrup length, from its bottom to the attachment of its leather to the saddle, should equal that of the arm and hand as far as the middle, or knuckle, joint of the second finger. In general the tendency of beginners is to have stirrups too short and consequently to ride in the stirrups instead of the saddle. If good riders are observed carefully it will appear that they almost always ride with relatively long stirrups; this makes for comfort since it permits sitting down deeply in the saddle and for safety since the rider does not get into the habit of putting much dependence on the stirrups and would not be irretrievably lost if he should lose one or both stirrups. It need not be said that riding without stirrups entirely or with but a blanket on the horse instead of a saddle, as the soldiers are required to do at times, makes for balance and security. If a person can ride with considerable security without these riding aids, which were introduced in the Middle Ages, he can ride with great security when he has them.

After having mounted, the reins should be separated and held in the two hands for equitation, park or ordinary road riding, since this arrangement makes it possible to guide and control the horse better. For road or bridle path riding on a horse which is known to you to be safe and easily handled, the left hand grip described in the discussion of mounting may be used. In shifting the reins to the two hand grip the left hand reins remain exactly where they were when you mounted, the snaffle rein outside the little finger, the curb rein between the third and little fingers and the free ends of both passing around the thumb side of the first finger to be held between it and the thumb. The right hand reins are then taken in the right hand in the same fashion. In both cases the curb reins should be given a bit of slack rather than pulled taut since, with most horses, the curb is merely an emergency brake and the riding is done on the snaffle rein, which should be kept just tight enough, under ordinary circumstances, to exert a minimum pull on the bit—for the horse's mouth to feel it lightly. The reins should not be twisted. The rider should sit erect but relaxed. This may seem contradictory, but it really isn't. In other words the posture of trunk and head should be good but not stiffly so. In order to attain it, try lifting the crown of your head (not the forehead) as high as you can. This will straighten back and shoulders, bring the chest up, the abdomen in and the head into good position. This effort gives you the position but would make it stiff and strained if the head lifting were continued.

The lower part of the leg should be vertical and hang by gravity, with the ball of the foot resting lightly on the stirrup iron, the heel dropped an inch below the toe, and the foot parallel to the horse's length. Experiment will demonstrate that this position of foot and leg gives a better grip on the saddle with the knees than if the toes are turned out; and this grip should be maintained by the knees and not by the calves. The knees are the stationery pivots for the body in rising to the trot. The upper arms should hang easily and practically vertically, and the hands should be kept low, just above the horse's neck and about 4 inches in front of the saddle, palms turned toward each other and close together. The wrists and elbows should be relaxed so that the movements of the horse's head may be followed by the hands without producing a series of jerks on his mouth. Slight pulls on the reins may be accomplished by the wrists alone.

The position described is maintained at all gaits except that there is a change in the angles of the thighs as related to lower legs and trunk when rising to the trot. Even then the trunk and lower leg remain vertical; that is, the rider does not lean forward, although he does at the trot and canter in riding military style.

You're off! Not in the sense of parting company from your mount but of getting him into motion. To make him walk, pull ever so slightly on the reins to let him know that something is impending, and press with the calves of the legs or with the heels behind the saddle. If he is half the horse we think him he will start forward on a walk, and if you are the rider you should be by this time, you will continue in the erect but relaxed position, letting your body above the saddle move as necessary to adapt yourself to the movements of the horse but keeping your legs a part of him. To turn him to the left you pull back slightly with your left hand and, as you might surmise, pull with the right hand to turn him to the right. To stop him you lean back a bit and pull evenly with both hands but without raising them. In equitation or park riding it is thought poor form to shout "Whoa!" In fact all your directions to the horse are to be given by hands, heels, knees and possibly crop. This is a distinct advantage in case you might be riding a foreign horse. In the "dressage," a form of advanced equitation, I

(Continued on page 1149)

Century Photos

ALUMINUM IS AN EXCELLENT MATERIAL FOR COOKING UTENSILS.

QUESTIONS and ANSWERS

Baking Powder and Aluminum

To the Editor:—What harm is there in using alum in making pickles so that they will stay crisp? Are there any brands of baking powder that are dangerous to use? What brand do you recommend as safe for health? Is there any danger in using aluminum ware for cooking tomatoes? What causes the aluminum to change color when cooking highly acid fruits or vegetables? Is there any danger of any kind of food poisoning from allowing sauerkraut or tomatoes to stand in aluminum ware?

B. G. B., Montana.

Answer.—The Bureau of Health Education does not know of any evidence which would indicate that the use of alum in making pickles is harmful. However, this use of alum is unnecessary and can be avoided. Alum is not used in commercial manufacture; but salt is relied on to produce the texture desired. Satisfactory recipes for making pickles without the use of alum could probably be obtained directly from the office of the State Leader of Home Demonstration Work or through the County Home Demonstration Agent in the county where the inquirer lives or from the Bureau of Home Economics, U. S. Department of Agriculture, Washington, D. C.

There are three general types of baking powder on the market; namely, the so-called tartrate powders, the phosphate powders and the combination or double-action types of powders which contain sodium aluminum sulfate and calcium acid sulfate as the acid ingredients. There is no convincing evidence that the residue left by any of these powders is harmful in the amounts which are ordinarily present in foods. The Council on Foods of the American Medical Association has accepted several brands of combination type baking powders and one brand of the phosphate type. No brands of tartrate powder have been presented to the Council for consideration for acceptance.

There is no evidence that the use of aluminum ware for cooking, even for cooking such acid foods as tomatoes, is injurious. A film of aluminum hydroxide forms on the surface of aluminum utensils when water is allowed to stand in them or when most nonacid foods are cooked in water in such utensils. This film is readily dissolved by acid and is removed when acid foods are cooked. The small amounts of aluminum taken into the body with the food have been shown to be harmless. The film, however, is also readily removed by scouring the utensil with steel wool or with one of the commercial preparations intended for cleaning aluminum. It is preferable to keep aluminum utensils bright by the use of steel wool or one of the commercial cleaners, but there is no evidence that cooking foods in a darkened utensil is injurious.

We know of nothing to indicate that allowing sauerkraut or tomatoes to stand in aluminum ware overnight would extract enough aluminum to cause a toxic reaction.

Wrinkled Fingertips

To the Editor:—Would you please tell me why, when I come out of the bathtub after a long while, my fingers wrinkle up on the tops?

M. S., New York.

Answer.—The layers of the epidermis, or outer skin, can absorb much water. The cells which are thus caused to swell must occupy more space, and the skin is accordingly forced into folds.

Wax in Ears

To the Editor:—My ears have a tendency to fill up with wax about every two or three years to such an extent as to impair my hearing until the wax is removed by a physician. What would you recommend that I do as a preventive measure? Is it safe for me to syringe them occasionally?

L. J. R., Minnesota.

Answer.—The accumulation of wax can be avoided in many cases by occasionally pouring into the canal ten or fifteen drops of hydrogen peroxide warmed to body heat, the head being held so that the liquid will be retained for several minutes, then tilted to allow it to run out. Then the outer portion of the canal should be gently dried with sterile cotton wound tightly on a toothpick; loosened particles of wax will adhere to the cotton.

This procedure may be followed as frequently as once in four to six weeks. The use of glycerine, oil or other medicine should be undertaken only on the advice of a physician. Irritation of the canal with matches, toothpicks, earspoons, hairpins and so forth should be avoided, since it is likely to stimulate the production of wax, produce infection of the skin of the canal and injure the drum membrane.

Syringing is best left to the physician or the nurse trained in this field. To inject water into the canal in case the drumhead is perforated invites a recurrence of a running ear with all its dangers.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Wool Sensitivity

To the Editor:—I wish to get information in regard to materials suitable for winter garments for a child allergic to wool. Can you give me a list of such materials and of the places where they may be obtained as well as a list of firms that handle the garments?

W. S. C., Tennessee.

Answer.—The majority of wool-sensitive cases are a dermatitis and can be avoided if cotton underwear is worn. However, most persons who are supposed to have wool dermatitis have in reality heat dermatitis. It is difficult to trace any nasal or bronchial allergy to wool.

A new fabric composed of linen and mercerized cotton is recommended for use in the foregoing allergic condition. This is available in double-breasted vests, sleeveless vests, nightgowns, button shirts, union suits, slip-on shirts (both sleeveless and short sleeve), training union suits and double duty panties.

If a local dealer does not carry the particular style desired, he can easily secure it.

Leprosy

To the Editor:—I am a missionary in Colombia, and there is a great deal of leprosy here. Recently the father of some of my best friends has been declared a leper and sent to the colony. His wife and children have been living with him all this time. I should like you to tell me how long there will be danger that the disease will be manifested in them. They have all had tests that were negative. I want to know if it is dangerous to associate with them and if they could transmit the disease.

B. M. G., South America.

Answer.—For ages, leprosy has been considered by laymen as a highly contagious disease. This belief is not supported by facts or scientific observations. Many would place it near the bottom of the list, if contagious diseases were tabulated with the most contagious at the top. Its communicability is no greater than that of tuberculosis, with which it is comparable in many respects.

The incubation period of leprosy cannot be stated definitely; the minimum reported is eighteen months, the maximum indeterminable, owing to the uncertainty of the date on which any particular person may have received the infection. There is a feeling among those familiar with the disease that after seven years following the last possible exposure, the probability of development of the disease lessens quite rapidly.

In the family mentioned, the probability that the wife and children will contract leprosy depends largely on the condition of the father's leprosy at the time it was diagnosed, the age of the children and the degree of intimacy of the contact. In only about 5 per cent of the cases does the other marital partner contract the disease, assuming that the second partner was free of the disease at marriage. Children and adolescents are more susceptible to the infection, though the disease may not appear until puberty or early adult age and less frequently at older ages.

The family of the man would not be considered dangerous until leprosy appears in them. Under competent medical observation the disease should be recognized before it develops to a communicable degree. Under the circumstances the family should be induced to undergo frequent medical examination, about once every three months for three years and whenever any skin lesions may appear.

Dropping them from friendship would be unwise, for the wife and family are the ones in greatest danger. To ostracize them would tend to cause them to conceal any evidence of the disease as long as possible, should leprosy appear in any of the family, and they would perhaps allow it to reach an infectious stage before they take any steps toward treatment and arresting the progress of the disease. Until it can be shown that a person has leprosy, he is not a menace to others; if the disease is recognized and treatment begun early, the chances for the victim are much better than when treatment is delayed.

Pulling Hair Out

To the Editor:—I have a girl 7 years old who pulls all her hair out. She has done so ever since she was a baby, and she is completely bald. She seems normal intellectually but is bothered at times with stomach trouble. She constantly twirls her hair, even unconsciously.

D. U., Kansas.

Answer.—Assuming that medical examinations have not revealed any condition causing irritation of the scalp, it may be stated that there is no disease which will make a child act in this way. Pulling the hair is probably a habit which was acquired as the result of some emotional experience, the nature of which can be learned only through detailed psychiatric study of the child's development and experiences. This may require the use of special technics, such as the play technic, recently developed for the study of the psychology of children. Such methods of study are practiced by children's psychiatrists and child guidance clinics. The procedure often requires a considerable length of time with many interviews. However, the age of this child suggests that the experiences responsible for the habit are not buried very deeply; this is in favor of more speedy discovery.

WHAT ARE SUITABLE MATERIALS FOR A CHILD SENSITIVE TO WOOL?

Cy. LaTour

THE MAGIC OF TOYS (Continued from page 1070)

use his mental equipment in play. Through its use he should be enabled to utilize the following traits: imaginativeness, imitativeness, curiosity and adventure. He should specifically be afforded the means to express his creative abilities.

Toys have an educational function which is not generally appreciated. Building blocks and logs are examples of objects that stimulate the development of muscle skills. Peg tables, mosaics and other similar objects teach the child cultivation of the finer muscle movements which constitute the basis not only for mechanical aptitude but as well for gracefulness of body and clearness of mind. It is obvious that to be utilized to full advantage, toys must be only tools in the constructive processes and the child must be accorded patience and encouragement in his efforts to acquire abilities through trial and error. He will learn only when given the opportunity to appreciate design and structure through correction of his own mistakes.

About a year ago I witnessed a scene between a father and his 7 year old son. The youngster had been given a popular mechanical set which his father was thoroughly enjoying. Teddy was sitting with the thumb in his mouth, intrigued by the bridge which was being completed. To my suggestion that father and son change places at the task, the former remarked, "Naw, let him watch me. He can't do anything except suck his thumb." The inconsiderateness of such an attitude among modern parents is fortunately uncommon, though by no means rare.

Aside from an aid to development of skills requiring muscle coordination, toys afford invaluable training in human contacts. The child not only learns the appreciation for personal possessions but, what is of equal importance, is given an opportunity to acquire a give-and-take philosophy in association with his playmates. The trading system, though at times extremely one-sided, constitutes an education in property values which youngsters thoroughly enjoy, though not infrequently to the dismay of their parents. Thus while in most cases the exchanges involve no problems of consequence, there are times when the transactions are not entirely devoid of importance. The little fellow, for instance, who demolished his mother's watch had traded the valuable diamond setting for some trinket, and recovery involved complicated court procedure. Generally, however, the transactions constitute an innocent self educational system, and the youngster who occasionally gets the worst of a bargain may expect with confidence the opportunity to better his deal on the next occasion. With this phase of child psychology in mind the wisdom of distributing inexpensive toys becomes apparent.

There are many toys which serve as a stimulus to artistic developments. Coloring, pasting pictures and cutting out dolls and interesting drawings or pictures often bring out latent talents which otherwise remain undiscovered until later in life. It is a well known fact that many artistic abilities when discovered and cultivated in early childhood ripen sooner than if they are allowed to remain dormant until later in life. Appreciation for design, music and poetry may be acquired early if through proper medium the effort is made to inculcate these tastes. Many books adapted to the various ages are now available and may be utilized with benefit. It is important however to recognize the limitations of these procedures. Concentration time varies with different children and also with different occasions in the same child. Extreme care must be exercised to prevent tiring. Furthermore, when once the youngster takes a dislike to a certain form of play or study it is necessary to use tact in an effort to revive his interest.

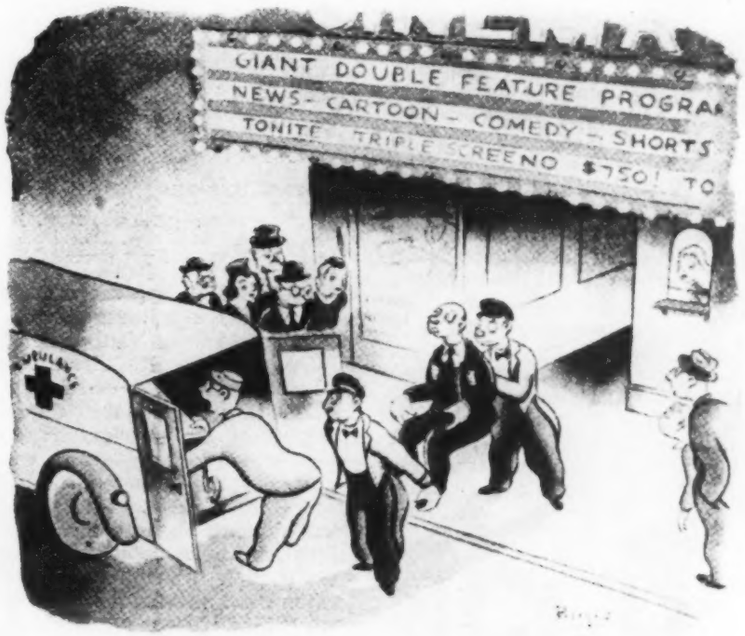
A young woman related to me recently that in her early childhood she showed special aptitude for drawing. Indeed she has remarkable ability in cartoon work even today. One of the reasons that this talent went by the wayside was the constant nagging of her mother.

I know a mechanic in a garage, who by the time he graduated from grade school was so bored with classic poetry drilled into him by a shortsighted aunt that he refused to attend high school. The Cavalier Poets, he complains, still haunt him in his dreams, especially when, as often happens, he is out of a job.

Besides these two there is 12 year old Michael, who the other day at a recital played the Grieg Concerto in A minor from memory. This boy has played the piano from the time he was 4 years old, but his mother assured me that at no time was he urged to practice longer than he himself desired. Some days it would be but a few minutes; other times he would sit for hours, studying, improvising—*playing*.

It is not implied here that a child who shows a constant lack of concentration be allowed to cultivate this bad habit. Rather is it my wish to impress parents with the fact that concentration is an urgent necessity to the future welfare of the individual and that no effort must be spared to cultivate it.

(Continued on page 1152)



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"HEY, MAC, ANOTHER CASE OF DOUBLE-FEATURE PARALYSIS!"

E. Meerkämper

HOCKEY IS NAMED AMONG THE OUTDOOR WINTER "GAMES FOR MEN AND BOYS."

NEW BOOKS on HEALTH

Games for Men and Boys

Paper. Price, 50 cents. Pp. 110. Illustrated. New York: National Recreation Association, 1938.

THIS collection of games, stunts and songs, which has been compiled especially for boys and men on the playground, at camps, at stag parties, picnics, banquets and luncheon club meetings, contains many old favorites and some new ones. The book fairly shouts, "Let's have fun!"

The material is well arranged in groups, including active games and contests for camp, playground and gymnasium as well as for indoor programs; physical stunts and feats of combat; games for groups to play while seated, including guessing games, brain twisters and table games; hilarious games and contests; dinner table games; entertainment stunts in which a few entertain the crowd; initiation stunts; pep and stunt songs; progressive parties, and games for hikes.

The book is conveniently small and compact. Explicit, simple directions and numerous source references and bibliographies are given. Of special value is a chart, prepared to serve as a handy reference for leaders, which classifies athletic games and sports according to the seasons and the ages for which they are best suited.

The book is a contribution to wholesome fun and pleasant leisure pursuits, and the reviewer is inclined to think that if Brother and Dad want it for themselves, they would do well to keep it out of Sister's reach. LEOLA J. HARRIS.

Personal Hygiene

By Clair Elsmere Turner, M.A., Dr.P.H. Cloth. Price, $2.25. Pp. 335. Illustrated. St. Louis: C. V. Mosby Company, 1937.

TEACHERS of hygiene are always looking for a textbook that is authoritative and deals primarily with personal health. This is such a book. Health instruction in schools is recognized as an essential part of the curriculum and is given to college students as well as to high school students and the upper four grades. The problems these students have to meet require an extensive knowledge of health, even though few will enter a profession that is directly concerned with health. There is no profession that is not concerned with health, although few are directly concerned with the teaching of health.

The author is well qualified to write a book of this type. He presents his material in an interesting manner. He avoids controversy and does not preach. He discusses nutrition, digestion and oral hygiene as well as sufficient physiology of the entire body, which must necessarily serve as a basis for all health teaching.

The illustrations are excellent, and the glossary is fairly inclusive. The references given at the end of each chapter give the student a good bibliography for further study on the topics that appeal to him individually.

While the author presents this as a book for students of college age level, it should serve as an excellent reference work for the home that wishes to be informed on subjects of hygiene, physiology and the healthy life. PAUL A. TESCHNER, M.D.

Physical Education in Institutions of Higher Education

Pamphlet No. 82 United States Department of the Interior. Price, 10 cents. Pp 32. Washington, D. C.: Office of Education, Department of the Interior, 1937.

WITH his customary thoroughness Dr. James Frederick Rogers offers a comprehensive historical background in his investigation of physical education in institutions of higher education. His study takes into consideration the changing conceptions in physical education, the importance of health in these objectives and finally a review of the situation in physical education in the various types of institutions of higher education.

The style of the author, disclosing a bit of humor, is illustrated in the following excerpt: "Beginning, three-quarters of a century ago with bells that were dumb except when dropped on the floor, with clubs no Indian ever touched, with ladders which lead nowhere, with 'horses' that never walked and 'bucks' which were perfectly passive we have rediscovered and adopted apparatus which is ages older, for we now introduce the student to the use of the fishing rod and the long bow; they learn to ride real horses, and they are often not only permitted but constrained to paddle in the old swimming hole which has been enshrined and glorified as the beautiful tile-lined pool of our college playhouses."

J. MACE ANDRESS.

[NOTE.—Books reviewed or mentioned in this section, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through HYGEIA or the American Medical Association. Publishers' addresses will be found at the end of the section.]

Psychology and Life

By Floyd L. Ruch. Cloth. Price, $2.75. Pp. 679. Illustrated. Chicago: Scott Foresman & Co., 1937.

HERE is something really new in a textbook in psychology! Many of those previously published have been dedicated apparently to psychology as a science, forgetful of its possible relation to the vital cravings and demands of the reader and student. Writers of psychology have frequently taken such delight in their facility in using a technical vocabulary that their English has been almost unreadable.

Now appears this beginning text with its underlying philosophy that psychology should be useful and helpful to young people who wish to get a better grip on life and face their problems successfully and happily. One opens the book to find on the first page an innovation. Before the subject matter there are eight pages of pictures showing the relation of psychology to life, a real antepasto in the psychologic meal. It whets the appetite for what follows: large pages, excellent print, subject matter selected with scientific care but with popular appeal, more illustrations scattered through the text and annotated bibliographies. A challenging workbook, "Working with Psychology," accompanies the text. There are also instructor's notes and objective tests to guide the teacher and save time. The content and temper of the text lend themselves to the point of view of mental hygiene. The college student and general reader will feel happy to find a book for beginners in psychology which, without "talking down" to its readers, is written in a scientific spirit and seems to understand them.

J. M. A.

Traits Characteristic of Men Majoring in Physical Education at Pennsylvania State College

By Nelson Sumter Walke, Ph.D. Price, $1.60. Pp. 62. New York: Bureau of Publications, Teachers College, Columbia University, 1937.

THERE are many ways of improving the quality of our teaching. Probably nobody would seriously question the importance of allowing only those who are best qualified to enter the teaching profession. Dr. Walke made a careful study of 145 men who were majoring in physical education at Pennsylvania State College. They were carefully measured for intelligence, scholarship, physical status, social and economic status, personality, leadership and vocational interest. This physical education group was then compared with 150 men in the School of Education and 160 men representative of the other colleges of the same institution. Three judges made a study of the physical education group and selected 25 who would probably succeed and 25 who were likely to be unsuccessful.

The results of the study showed more marked differences than similarities. The physical education group was found to be inferior to the education and general education groups in intelligence, scholarship and social-economic status. In all other traits the students of physical education seemed to be superior. Leadership, health status and interests in physical education were the most marked traits of the physical education group. The author admits certain limitations in the study and suggests at the end definite recommendations.

J. M. A.

Health Section Report, World Federation of Education Associations

Pp. 242. New York: Health Section Secretariat, 1937.

IT IS comforting to know that amid international chaos the nations of the world are cooperating in the interests of good health. An international organization now makes it possible for sixty-nine nations to share one another's experiences in health education. This volume is a report of the meeting of the Health Section of the World Federation of Education Associations at Tokyo, Japan, August 1937. There is necessarily an abridgment of many of the papers presented, but even these will give the reader a fairly good idea of the forward movement of educational hygiene throughout the world.

J. M. A.

To Drink or Not to Drink

By Charles H. Durfee, Ph.D. Cloth. Price, $2. Pp. 212. New York: Longmans, Green & Co., 1937.

THIS little book is well worth any attention which may be directed to it. The problem of alcoholism has been an extremely serious one in the United States for many years. The outlook taken by most people, including temperance reformers as well as physicians, has been that the situation is hopeless. As long as liquor will be sold there will be drunkards, and in spite of the "gold" cure, the sanatoriums and other methods developed so far, the matter has been getting worse and worse. Undoubtedly the problem so far as alcoholism in the United States is concerned is to find out how to prevent people from starting to drink; but what is more imperative—if such prevention is not entirely the answer to the complete eradication of the disease—is to determine the next step of curing those who have become addicted. It has been well known to psychiatrists that if the individual's mental mechanisms be thoroughly studied and treatment applied which could attack his abnormal thinking processes there was reasonable hope of curing alcoholism. Under psychoanalysis and other psychiatric technics, chronic alcoholics have been controlled and turned out into the community as good law-abiding citizens.

Mr. Durfee, who apparently works with physicians rather than being one himself (his background is not made clear), has formulated in this rather dramatic and well written little volume the idea that if one can understand the alcoholic personality and can bring to him the understanding that something can be done, half of the battle has been won; and according to his book, his method has proved to be highly successful. In brief, it consists in taking the alcoholic addict in hand, convincing him voluntarily that he wishes to be cured and bringing him to the author's farm. On this farm, after Mr. Durfee has been assured that there is no organic disease which will prevent it, the patient is encouraged to start doing farm work, not so much as a productive enterprise, although production gives the patient confidence, but as a matter of healthy routine and as a source of satisfaction that something can be accomplished by an individual who has lost his hold on himself. Durfee interviews his clients and attempts to understand them. He builds up in them the self confidence which they may have lost by habitual use of hard liquor.

In this book is presented, rather briefly perhaps and not as completely as it might be, a picture, illustrated by cases which have come under his observation, of how each case can be attacked and how the patient's self confidence can be restored. Several methods which should be of much value to the psychiatrist are pointed out. Durfee attempts to think out the problem with a definite object in mind; namely, curing the alcoholic. He attacks the physical, the social, the familial and the economic picture involved, and the success which he describes is one which would have been predicted by any psychiatrist who has done much thinking about the problem of the alcoholic. The style is charming, light, and the book is highly readable and very interesting.

LOWELL S. SELLING, M.D.

(Continued on page 1158)

VENOMOUS INSECTS (Continued from page 1125)

strated just what had occurred. Professor Herms of the University of California made a number of experiments to determine how serious the bite of this tick really was; he used most of the common laboratory animals. When monkeys were tried the bites produced a considerable local irritation which lasted four days. The animals seemed to suffer no other inconveniences. In about six days the skin disturbance had disappeared, and the skin was about normal again. When one of those animals was used again for another bite a few days later, results were the same. Experiments on rabbits showed local irritation only. The same was true of mice.

An interesting account is given of a physician who was bitten twice, two weeks apart, while in the mountains of southern California. The first time it occurred he was riding horseback over a hill covered with bushes when he felt a sharp sting on his left forearm. He found a pajaroello tick taking blood, though not fully engorged. This he removed at once and sucked the wound. He then noticed a dark purple ring surrounding a bright red spot where the tick had bitten. The discoloration soon subsided, but the arm was "highly irritable" for two or three days, and at the point of attack a minute, clear scab formed.

Two weeks later while in a thicket, he felt a pain on the left leg and found another tick of the same kind fully distended with blood, attached near the shin bone. The same discoloration was present there as on the arm. But this time the symptoms were much more severe. The leg swelled greatly, and the discoloration was considerably more widespread. This area was soft and puffy, and a clear fluid flowed from it. He lanced the leg himself and put on a dressing. All that night he suffered with a disagreeable numb and irritated feeling in the leg. A reaction also occurred in the previous bite on the arm, so he lanced that and applied the same dressing as on the leg. A fluid was exuded from both localities for several weeks, coming from under an "oily looking, transparent, red-mottled scab." (Account of Dr. W. L. Chandler.)

The larval forms of various moths and butterflies, commonly known as caterpillars, have attracted wide attention from time immemorial, and all sorts of legends and superstitions have developed about them. They are known to be destructive, as they eat enormous amounts of vegetation, while on the other hand occasionally one will produce a valuable substance, such as the silk worm produces. Some of these worms are much feared, usually because of some fancied resemblance to demons of some sort. Particularly is this emphasized if the worms possess spines or ornaments of various kinds. Some are perfectly harmless, while others, which may be exceedingly beautiful, may also be highly irritating. Of the former variety one has several horns about the head and another at the tail end, which generally is regarded as a sting; this caterpillar has received the name of the "hickory devil." This worm is entirely harmless.

Most of the caterpillars should be regarded as capable of producing more or less irritation to the skin until they are known to be harmless, for many of them have hairs that are really poisonous.

"SSH, MOTHER! THEY DON'T LIKE TO BE CALLED 'INTERN.'"

Courtesy of the New Yorker

Others have hairs that are barbed and stick closely to skin or clothing and cause much discomfort. Many of the "summer hives," especially in children are caused by irritation from the hairs of various caterpillars, often entirely unsuspected. As with other insect poisons, people respond differently to the presence of hairs of such worms; but almost every one shows some evidence of irritation when the worms are abundant, some suffering severely from them.

There are many types of caterpillars that produce such irritations as mentioned, and a few of the most common will be considered. If caterpillars are more or less numerous and one is uncertain as to what they are, it is always well to submit a specimen to the nearest agricultural department office for classification and information as to its effects on people.

One of the most common moths that produce larvae with irritating or "nettling" hairs is the brown tailed moth (Euproctis chrysorrhoea). These first gained a foothold in the New England states, and not long afterward there were numerous cases reported of an irritation of the skin, a dermatitis, that had not been observed before. This was mostly on the exposed parts of the body, neck, hands and forearms and was accompanied by an intense itching. It was later discovered to be due to the short, barbed hairs of the caterpillar of the brown tailed moth, though sometimes the cocoon and occasionally the moth itself would produce such disturbances. This irritation was bad enough, but it was much more serious when the eyes were involved or when the hairs were breathed or swallowed. These hairs are barbed, and it was thought at first that the trouble was due to the hairs "working in." Further investigation proved that the hairs actually contain a poison, which produces a marked change in the red blood corpuscles, and this will account at least partly for the general symptoms. This was definitely demonstrated by removing the poison from the hairs and then applying them, when no irritation followed. As these caterpillars are common in some localities they may cause quite a serious summer problem. Not only do the hairs irritate when in contact with the skin directly, but they may get into the clothing and keep up the irritation.

The "puss" caterpillar (Megalopyge opercularis) is often common in southern states and may cause widespread annoyance through the production of skin irritations. In susceptible persons there is sometimes quite marked swelling of arms and legs from contact with the hairs. This may be accompanied by nausea and vomiting and a generalized numbness. Children are sometimes seriously ill from such exposures. A similar caterpillar occurs in the North (Logoa crispata), which produces about the same effects.

The saddle back caterpillar (Sibine stimulea), which is found in the central, eastern and southern parts of the United States, possesses poisonous spines along its back and sides. This is one of the "slug" caterpillars, many of which are poisonous. This one most people will recognize readily, as it has a peculiar purplish-brown saddle-like patch on its back, set on a "saddle cloth" of green. These are likely to be found on cherry and plum trees, on forest trees and occasionally on corn. They are not likely to be numerous, and this is fortunate, for their contact may be painful.

The "io" moth is one of the most commonly known in this country (Automeris io), and its caterpillar grows quite large, perhaps to 2½ inches. It is striking in its colors and really beautiful. The basic color is pale green, while the sides are striped in cream and red, usually adorned with black spots. Some of the hairs carry poison, and as the hairs tend to break off in the skin, the poison is forced in and produces much irritation. This moth is most common in the eastern and central portions of the country and is found on many plants. It seems to be particularly fond of the willow tree, and the caterpillars are frequently found on these trees in large numbers.

Perhaps the most beautiful of the caterpillars is that of the white-marked tussock moth (Hemerocampa leucostigma), often a serious pest of shade trees. A velvety black stripe bordered with bright yellow runs down the back. Another yellow stripe is found on each side. In front are rows of black hairs with plumelike tips, and whitish tufts are found about the middle. One of the most interesting facts about this worm is that it was at first regarded as harmless, and school children were encouraged to collect the egg masses. These egg masses contain many of the hairs from the mother. But in collecting the eggs the children frequently came in contact with the caterpillars and many showed irritating effects. Then some experimental work was done, and a hundred students volunteered to try the effects. Every one showed some irritation, though of course there were marked variations in different individuals. The younger worms possessed more poison hairs than those in the later stages of development.

Ordinarily there is not much more than an uncomfortable irritation from the contact of the nettling hairs. But with children there is always the danger that they will handle the "pretty bug" or put it in the mouth. Such contact with the inside of the mouth might result in a serious swelling of the throat and even endanger the breathing. In such an accident the child should be rushed to a hospital, as the possibility of the necessity of a tracheotomy or intubation to save life is not to be lost sight of.

If at any time with skin irritations the eyes show any sign of inflammation, expert advice should be sought at once. Serious inflammatory effects have followed the entrance of these hairs into the eyes.

Usually simple remedies are sufficient to relieve the distress of skin irritations. A solution of cooking soda (sodium bicarbonate) will frequently be all that is necessary. If the itching is severe a solution of carbolic acid alone (never more than 5 per cent) or with menthol (3 to 5 per cent) in dilute alcohol will usually give prompt relief.

It should be remembered that clothing may keep up the irritation, and all clothing should be washed or otherwise thoroughly cleaned. This applies also to bed linen and blankets.

Various sprays to rid the vicinity of moths should be employed. Usually this is done by properly equipped experts. All caterpillars should be regarded as potentially irritating unless they are proved otherwise.

The tricks of parasites are many and varied. Some are only annoying, some are serious, and some may lead to fatal results. Our only protection from these parasitic enemies is a knowledge of how they live, for with such knowledge we have a fair chance to combat them. Often by utilizing chemistry, electricity or biology, more or less complete control of their activities may result, and their damages may be minimized or removed.

There is no immediate possibility of complete destruction of any known variety of parasite. The best that man can hope for is to learn to live with them and keep them so completely under control that they will not be a menace. This means a continuous fight, but a worthwhile one, for in most cases they damage us only when in great numbers. Much can be done by protecting the natural enemies of these parasites in order that the "balance of nature" may be disturbed as little as possible.

As in most of our struggles with disease prevention, "knowledge is power."

ON THE ALTAR OF SPEED

(Continued from page 1090)

How, you may ask, is overindulgence in athletics to be controlled? To begin with, boys seeking places on school teams should be required to submit to examinations by physicians before and at the middle of a season. And boys failing to pass the physical examination should not be permitted to compete even though parents are sometimes willing to sign documents allowing boys to play regardless of their health record.

It would help, also, to permit boys to compete in only one major sport at a time. This would limit most boys to two major sports during a school year. No boy should be permitted to win four or five letters in major sports during a school year, as is sometimes the case.

Cities, and country towns close enough together to compete in one league, would do well to form coordinating sports councils for the purpose of regulating the amount of sport competition for each boy. Perhaps in no other way are we doing a greater injustice to the health of the boy athlete than by letting him play on so many teams.

I have in mind one boy who is a star basketball player. Soon after this boy's high school team had finished its season, he was playing on three different club teams, organized outside the jurisdiction of the school. The boy was playing too much. He became restless and irritable and unable to make a creditable showing on any of the teams with which he was playing.

A properly organized coordinating sports council could prevent too much competition on the part of any one boy. In a city a coordinating sports council might be made up of representatives from the recreation department, industry, churches and school department and a physician from the health department. In large cities it might be well to organize coordinating sports councils for various areas. For country towns a county might well be a natural geographic unit for such a council.

The duties of a sports council should include, it would seem, regulation of the number of teams on which any one boy could play. It should also see to it that for major sports physical examinations are required of all players, whether members of a school or club team.

Participation on both school and club teams should be prohibited. And this council should, as well, have jurisdiction over the making of schedules and see to it that not too many games for the week and for the entire season are scheduled for boys' teams. Of course, it is still a debatable subject as to just what constitutes too much competition or too many games a year.

The number of games to be played during a season is a problem of which a coordinating sports council ought to make a careful study. The California Interscholastic Federation, a statewide high school athletic association, which is making a study of overdoing in athletics, hopes to establish standards of the amount of competition permitted to each boy. Other associations are facing this problem, too, which is a hopeful sign.

This discussion of participation in athletics brings one to the fact that athletic competition can surely be overdone for boys particularly, and schools will do well to stress more their intramural sports programs.

Intramural programs, that is, competition within a school or club, hold out great hope for the future of sports. The boy playing on an intramural team does so mostly for the fun of it. The highly competitive attitude is not there. The intramural program has the advantage, too, of offering a chance for all to play.

Most intramural programs are made up of "carry-on sports," such as tennis, golf, badminton, swimming and hiking, sports that can be carried on through adult life. This has a distinct advantage of contributing to bodily health over a long period of time, whereas the extremely competitive game must of necessity be short lived.

An intramural program is, however, expensive. For all to participate in sports requires much space and equipment. City schools, especially, find space a serious problem. Parents should consider these facts before criticizing physical education departments for not putting on more elaborate intramural sports programs.

Parents have a responsibility, also, in seeing to it that their sons' participation in competitive sports is regulated. Surely parents should demand a physical examination by a physician before allowing their boys to play on major athletic teams. This, plus regulation of the amount of participation in games, will find fewer of our boy athletes sacrificing themselves on the altar of speed.

"WHAT KIND OF A NOISE ANNOYS?"

(Continued from page 1086)

workers was increased 8.8 per cent. Errors of typists were reduced 29 per cent, while those of machine operators were reduced 52 per cent. Employee turnover decreased 47 per cent, and absences dropped 37.5 per cent.

A reduction of the noise level was responsible for a 42 per cent reduction in errors in the telephone room of a telegraph company, with a 3 per cent drop in cost.

A metabolism experiment conducted at Colgate University showed that 19 per cent less energy was consumed by typists after noise in the experimental room was reduced from 50 to 60 per cent in loudness by the addition of sound-absorbing wall panels. Letters were typed 13 per cent faster during the "quieted phase" of the experiment. The same reduction in the loudness of complex noise resulted in a 15 per cent increase in accuracy in immediate memory for nonsense syllables and an 8 per cent increase in accuracy in delayed memory.

Sudden noises have been shown to cause appreciable physical changes, such as increased pulse rates, increased blood pressure and irregularities in heart rhythm. Noise may seriously affect the normal digestive functions and thus assume a causative role in nervous indigestion. If work must be done in the presence of a distracting noise, one's nervous system probably makes a continuous effort to adapt itself to that disturbance. A more intense mental application is required to focus attention on certain types of work, and eventually nervous or mental fatigue may occur.

Relaxation in quiet surroundings after working hours may be an important means of preventing chronic ear diseases and fatigue due to noise. As pointed out by the New York report on "City Noise," sleepless nights are many times the result of unnecessary or thoughtlessly produced noises.

How then can noise be eliminated? Much noise is unnecessarily produced by the needless sounding of automobile horns, the operation of loud radios, the harboring of noisy animals and so on. Manifestly this type of noise can be eliminated only through regulatory

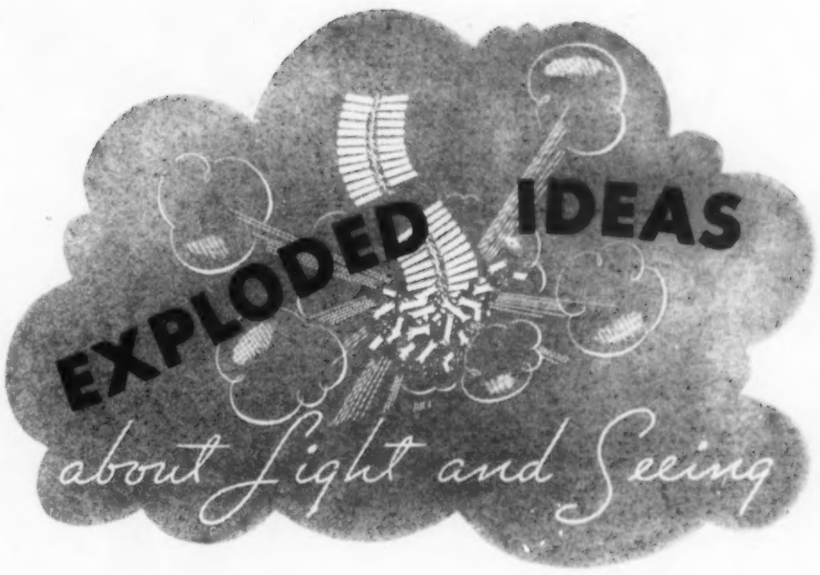
and educative procedures. Referring now to noises of more nearly pardonable character, such as those in industry, it is maintained that elimination at the source is the most satisfactory method, although it may be expensive and difficult, requiring special initial experimentation and innovation. However, over a period of several years, the cost of this method may be less than either of the other two procedures. The noise in machinery is often the result of faulty design and worn parts; redesign or repair of such equipment may result in greater life, less loss of power and consequently lower operating cost. Silent operation may be accomplished by the use of well balanced parts to reduce the tendency to vibration, by keeping the machinery well lubricated, by isolation of machinery in soundproof rooms and by the use of flexible cushioning supports.

As an example, to avoid the noise and vibration of a pneumatic riveter, pressure riveting may be substituted for impact riveting; the automobile industry has successfully applied pressure riveting to the assembly of certain units of steel bodies and frames. Another solution is the use of welding in place of riveting, and at the present time the steel skeletons of many buildings and other structures are welded instead of riveted.

In industry, air conditioning offers little promise of protection against noise for workers employed near the origin of the noise. Vibration in ranges below audibility has a prominent role in the production of injuries arbitrarily classed as noise diseases. Although inaudible vibrations may involve occupied areas that may be air conditioned, obviously no protection can be secured from such vibrations by air conditioning.

In the home, however, and in office buildings, department stores, theaters and other public buildings, when air conditioning appliances lead to the closure of windows and doors and at times introduce double windows and doors, extraneous noises may be reduced considerably. Depending on the loudness of extraneous noises, these barriers may operate to protect the occupants of air conditioned spaces against as much as 75 per cent of noise, but more often in the general range from 45 to 55 per cent.

Distinct from the noise-lessening effects of air conditioning, noise entering occupied areas from extraneous sources may in some measure be controlled through the use of sound absorptive material in or on walls, ceilings and floors. Ordi-



THE IDEA THAT LIGHT THAT IS GOOD ENOUGH FOR ONE TASK IS GOOD ENOUGH FOR ANOTHER

The amount of light needed is in direct proportion to the difficulty of the seeing job. For example, sewing dark goods with black thread requires far more light than sewing white goods with black thread. Dark thread on dark goods does not provide sufficient contrast. Added light will make seeing easier. Reading a newspaper, where the paper is gray and the ink is grayish black, requires three times as much light as reading a well-printed book in the same size of type.

GOOD LIGHTING MAKES SEEING EASIER

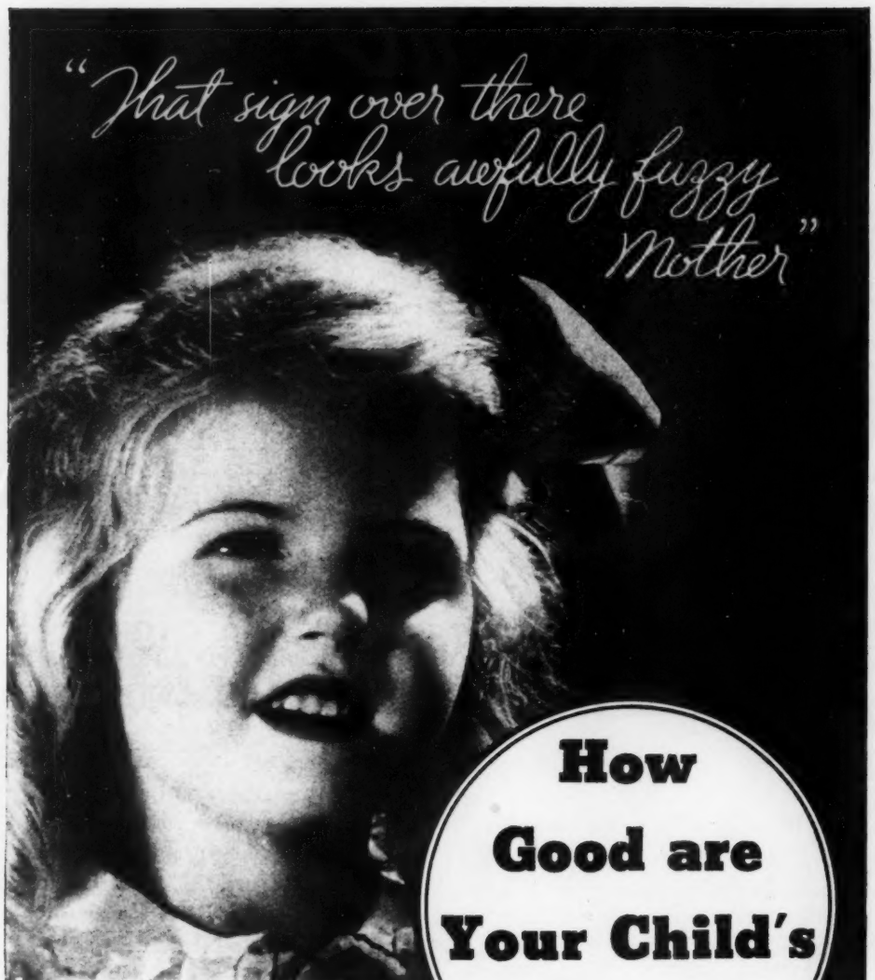
Tests in the Lighting Research Laboratory at Nela Park have proved that our speed and ease of seeing increases as light increases, and slows down as light becomes dim. Today, most electric service companies will gladly measure the light in your home or office with a light meter and show you how to get better lighting for faster, easier seeing. Ask them to send a trained lighting adviser to measure the light in your home or office.

Thanks to years of scientific research, good light costs the user less today than ever before. The G-E bulbs of 1938 are the brightest in history.

LISTEN IN . . . *the G-E Hour of Charm with Dorothy Thompson "Spotlighting the News" and Phil Spitalny's All-Girl Orchestra every Monday evening 9 to 9:30 E.S.T., N.B.C. Red Network.*

GENERAL ELECTRIC

Good eyesight . . . corrected when necessary . . . and good lighting . . . are the first essentials of seeing.



How Good are Your Child's Eyes?

DOES your child see clearly? Or does she struggle against the handicap of defective vision? Perhaps she has no difficulty reading a book, but can she read a sign across the street? Her distant vision may be good, but does she strain her eyes for close work?

Notice if she has any telltale signs such as habitually holding a book close to her eyes or gluing her nose to the desk, squinting when she reads or thrusting her head forward to see far-off objects.

Should she show any of these indications, her eyes need examining. Fortunately, the majority of eye defects can usually be corrected by properly fitted glasses.

Many a child, however, is needlessly doomed to a lifetime of suffering from the disfigurement of cross-eyes because parents fail to take proper steps in time. These children are often teased and taunted by schoolmates. Frequently they develop shy, highly sensitive personalities. They may be handicapped both socially and in their work all their lives.

The cross-eyed child needs help and needs it *now*, even if she is only two years old. She will not outgrow the condition. If it is neglected, straightening the eye and saving the sight become more difficult. No wonder wise parents are eager to secure competent professional aid as soon as a child shows any signs of cross-eyes.

Children are dependent upon their parents for guidance. Teach your child about the danger of glare from both the sun and artificial light. Make sure that she does not read in a dim light. Tell her not to rub her eyes, especially when something gets into them.

Your child's future depends largely upon her sight. Take no chances. Regular eye examinations are the only way you can be certain that her eyes are normal.

If discovered in time many defects can be rectified and the eyesight corrected. A postcard will bring you, free, the Metropolitan booklet "Care of the Eyes." It contains many helpful suggestions. Address Booklet Department 1238-Z.

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, *Chairman of the Board* LEROY A. LINCOLN, *President*

ONE MADISON AVENUE, NEW YORK, N. Y.

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narily the reduction of the noise level by these measures is from 30 to 50 per cent. Radio broadcasting studios have found it possible and practical to eliminate as much as 80 per cent of both interior and exterior noise. Many modern offices are made noisy by the use of endless typewriting, duplicating, accounting and addressing machines, along with the general din of conversation. The elimination of such noise should be controlled at the source through the use of "silent" or noiseless office equipment. That which cannot be so eliminated may be minimized through proper architectural devices.

Many writers have described methods of personal protection against noise and vibration, as, for example, the use of wax, petroleum-impregnated cotton or soft rubber ear defenders against air-conducted noise, and the wearing of soft soled shoes for protection against floor or ground vibrations which might be transmitted through the bony structure of the body. Protection further may be promoted by the use of straw, felt or rubber mats, and special chairs or platforms mounted on springs. In hammering operations the use of benches with springs for supporting the work does much to reduce the vibrations experienced by the workman at each blow. Faithful wearing of ear plugs undoubtedly serves some purpose in protecting against bone-conducted vibration.

Since the ear does not have an external protector similar to the lid that guards the eye against disagreeable stimuli, it is desirable to reduce or eliminate unpleasant and harmful noises through whatever means may prove possible, whether that means be the installation of air conditioning, the elimination of noise at its source, the reduction of noise by altering the surroundings, or personal protection against noise. Through careful application of the measures which science has put at our command, we may thus improve health, hearing and efficiency and eliminate much of the noise that annoys.

SCHOOL AND HEALTH

(Continued from page 1133)

color of the flame. Now dip the wire in a test tube which contains calcium hydroxide solution. Then heat the wire in the flame again. Notice the orange or reddish color of the flame. This color is evidence of the presence of calcium. Dip the wire into milk and then place in the flame, and notice the color. Repeat by dipping

the wire into the curd prepared in the supplement to the sixth experiment.

Results

The orange or reddish colored flame resulting when the platinum wire is dipped in milk, or the even stronger color when dipped in curd, is evidence that milk is rich in calcium.

Conclusions

If foods give off an orange or reddish flame when tested on a platinum wire, they contain a significant amount of calcium.

Note to Teacher

The calcium hydroxide is tested here merely to show students what to look for in testing the milk. For contrast, the wire may be dipped in salf and placed in the flame. The brilliant yellow flame indicates the presence of sodium. It is difficult to get a strong calcium test in most foods, other than milk, because of the smaller amounts of calcium present and the tendency of other food elements to obscure the color test.

References

Teacher: EVERYDAY PROBLEMS IN SCIENCE, by Charles John Pieper and Wilbur Lee Beauchamp. Rev. Pp. 748. Price, $1.60. Illustrated. Chicago: Scott Foresman & Co., 1936.

Pupils: SCIENCE EXPERIENCES WITH HOME EQUIPMENT, by C. J. Lynde. Pp. 240. Price, $1.75. Scranton, Pa.: International Textbook Company, 1937.

Teaching Physiology and Anatomy Through Modeling

FLORENCE B. BENELL, M.S., P.H.
Central Junior High School
MUSKEGON, MICH.

The following article shows how a teacher found a new and effective way of teaching anatomy and physiology to pupils in a junior high school. Other effective aids were utilized.

"BY ITS touch you shall know it," is a statement not too far-fetched in reference to learning and particularly when that learning is in the field of hygiene. Last September I was confronted with seventy eager 13 year old girls hungering for the knowledge of how their bodies work, and I wanted to feed them well.

I set up several projects to keep the students interested as well as to give them a lasting knowledge of the subject. Having decided that the only way to learn what the organs of the body looked like was to make them, since actual dissection in junior high is not possible, I provided each student with clay,

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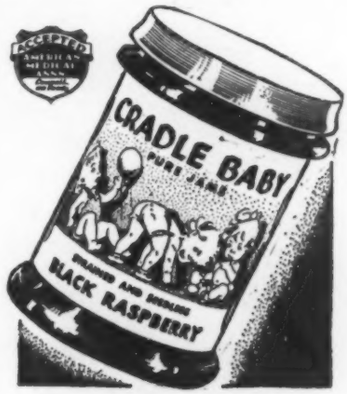

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from which organs such as hearts, lungs, stomachs, livers and spleens soon began to shape.

Each student who desired to use clay was given a quantity of that, and each one who wanted to draw or cut out the organ studied was supplied accordingly. A Sobatto's anatomy served as the model for the drawings and clay models. Enlargements of Sobatto's figures were put on the board in colored chalk. A paper human model was also used as an aid. Each pupil was allowed to proceed at her own speed, and discussion was held on the completed models. The best ones were kept, and the others were discarded into the used clay pail to be mixed for further uses. The drawings and cut-outs were placed on the bulletin boards. For a more clarified picture of this method I will describe the digestive system project:

1. The class was shown several pictures of the esophagus, stomach, intestines, liver, gallbladder and pharynx.

2. Those who wished to draw these parts were given paper and the necessary colored prints. Those who wished to cut out the various parts were given colored paper and tracing paper; they were allowed to trace from the model. Those who wanted clay were given the necessary clay.

3. Those who did the cut-out work assembled the best work together on a large white cardboard in the positions found on the model. Then the person who did each part used on the cardboard was required to be well informed on the physiology of it. The clay group decided on the best models, and procedures similar to those used in the cut-out group were followed.

4. Only then did the term "digestive system" come out, and by having the individuals discuss in order the functions of the part they made, the whole digestive tract was simplified for the better comprehension of the class.

5. As a summary, I outlined the function of the system.

Since each of the systems, the respiratory, excretory, reproductive, nervous and digestive, was studied in the same manner, the students were enabled by a few hours of work to retain a visual image of what would have required many hours of reading.

By this approach I found the subject of reproduction a simple matter to discuss. The pupils modeled the uterus without knowing its function until the whole system was discussed. This approach eliminated all sense of embarrassment, and the subject matter brought on the same attitude that characterized any other of the systems studied.

In collaboration with the modeling and cut-outs, moving pictures and slides were used extensively. The moving pictures are on health, demonstrating the importance of some of the systems studied. The students make the slides on those health problems in which they do outside work. Further to stimulate the interest in health, a monthly paper is published by the students, covering simple health questions which I answer, health jokes, poems, athletic news and social news.

Subject matter which is visualized in a definite shape and form is far more effective in teaching than all the lectures and reading could ever be. When you do something with your hands you retain knowledge thereof much more accurately and vividly than by merely reading or hearing about it.

A Health Exhibit

HELEN McDIVITT
BOVINA CENTER, N. Y.

Good health teaching leads to clearly defined ideas and interests and stimulates healthy living. This is what a teacher of the fifth and sixth grades found out in planning a health exhibit with her class. The following teaching unit was based on the idea of teaching by contrasts.

AT THE close of each school year we are required to make an exhibit, using some five or six subjects, one being a major topic and the others correlating. This year I chose contrasts of right and wrong health practices, calling my exhibit "*This*—not *This*."

We showed the right and wrong practices in connection with the following five centers of interest: sleep, foods, exercise, cleanliness and prevention of disease. I arranged five card tables side by side, and on each we placed our conception of the right and the wrong health ideas pertaining to one center. Back of each table we hung a poster made on paper 24 by 36 inches displaying the center. For the food table we made a poster showing several vegetable men going to the Milk Bottle Castle. On each face was a broad happy smile. On the lower half we made people by drawing legs and arms and sulky faces on doughnuts and lollipops walking toward the teapot hut. The other posters followed the same

idea, the upper half showing a happy, right side of the picture and the lower showing the gloomy, wrong side.

On the "sleep" table we made two rooms. The one was papered in cool light blue paper with a window open and tiny ruffled curtains blowing in the wind. The bed was neatly made up; the doll was dressed in a loose nightgown, and her day clothes were hung on the wall. The furniture was made of small boxes painted white. The other room had a dark oatmeal paper with a gold design. The window was covered with a dark hanging, tightly drawn; the bed had two grown-up dolls, with a small doll wedged in between one of them and the wall. We had a crib which was much too small for the doll who occupied it, and she lay all doubled up. The clothing on the bed was heavy, and the dolls had their clothing on.

The "cleanliness" table was the most easily arranged and the best looking. We carved a bathroom out of soap. Modernistic fixtures gave a bathroom with the simplest carving. In it we had washcloth and soap, a toothbrush, comb, nail file and a clothes brush. Doll accessories were the supplies, and it was easily put together. For the wrong side we made a dressing table from a cigar box and added a sloppy befrilled skirt. On it we placed a vanity case, creams, rouge, lipstick, eyebrow pencils, hair curlers and wave set and the most hideous nail polish we could find. Seated at the table was a frowsy-looking, frumpy doll won at a carnival, and powder was sprinkled over the whole mess. One boy slyly sprinkled some cheap perfume over the result, and it certainly told its story.

The exercise display was made with two sand boxes. The right one had grass and was fenced; there were trees giving shade; the seesaw, the swings, the slide and the sand pile were made, and several dolls dressed in play suits were there, evidently happy. Some toy autos were outside the fence. The other sandbox had a road with several trucks and cars; the dolls were in the path of the cars, one being under a truck and one chasing another from behind a parked car at the curb. On the side of the road was scattered a collection of broken glass, rusty nails and other trash. In one corner we had a blue paper pond with tree stumps glued on, muddy patches of slime and a doll drowning, despite the sign, "Danger, Deep Water."

The food display called their 4-H knowledge into play, and we had a table set with doll dishes and vegetable plate foods with milk and brown bread. This table was attractive with a tiny vase of flowers, and the whole was covered with Cellophane. The other table was not set correctly; we had fried foods and sweet foods predominating, with tea and coffee for drinks. We even had three or four flies for atmosphere.

The disease prevention display was the favorite of the children, mainly because that part of health study happens to be most interesting to them. We made our Community Hall out of a pasteboard box with the façade copied on it. We put up a sign featuring free toxoid clinic and dressed a doll to represent our community nurse and a male doll in white. They stood by the door welcoming tiny dolls to the clinic. The other side of the table represented an apartment house on a deserted street. Its several doors had red quarantine notices, and not a person was in sight. They were all in the apartment house, ill with a preventable disease.

We wrote themes on the necessity of following the right practices in regard to health habits, which, bound in booklets, enabled us to study English; all the measuring employed arithmetic in a meaningful situation; listing of statistical facts pertinent to playground accidents and to communicable diseases took care of our reading, and the art study came in making the posters, with the health part our major activity. These, then, made the five subjects necessary to fulfil our requirements.

We thoroughly enjoyed preparing and assembling this unit, and although most fifth and sixth graders really know all these things, portraying them for some one else to see made them more enthusiastic about their own health practices. The materials were all easily assembled; the manual labor involved was not difficult to execute, and we felt we really showed what we wished to show.

To Contributors:—The editor of the School and Health Department will be pleased to receive articles dealing with the actual solution of concrete and practical health education problems in the school. Contributions on general theory are not solicited. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of HYGEIA, *67 Clyde Street, Newtonville, Mass.*

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NEW BOOKS ON HEALTH

(Continued from page 1139)

The Family in Health and in Illness

By Florence Brown Sherbon, A.M., M.D. Cloth. Price, $3.50. Pp. 516. Illustrated. New York: McGraw-Hill Book Company, Inc., 1937.

THIS book, written "to assist the college woman student to orient herself with reference to the conservation of her own health and that of any family group for whose welfare she may become responsible," has many excellent features. It grows out of seventeen years' experience in classroom teaching. It is in four units, having to do especially with "positive health," the common diseases, care of illness in the home and safety first. The first unit, except for the rather ridiculous title, is excellent. What is positive health? The material presented under this title includes an opening chapter of great value to the girl student getting settled in a room away from home for her education; this is followed by discussions of heredity, anatomy, physiology and hygiene, dietetics and public health. The material is well presented and sufficiently comprehensive, perhaps in some instances more detailed than the average woman is likely to need after graduation.

The second unit, on common diseases, does not measure up to the first unit in quality, largely because the effort is made to tell too much in too little space. Certain errors or debatable points have crept in, such as the phrase "mild scarlet fever or scarlatina," implying that there is truth in the common popular fallacy that "scarlatina" refers to mild cases of the disease, whereas it is merely the Anglicized French name for the disease itself. A picture is shown of a mother dropping oil in a child's nose, a procedure now looked on with doubt if not disapproval by many pediatricians.

Many of the descriptions of disease give the impression that they have been written after the style of medical textbooks with certain simplifications as a concession to the needs of the lay reader. This approach to health writing for nonmedical persons is obsolete. It is illogical, in such a book, to give about the same amount of space (one or two inadequate paragraphs) to acne, a common disease of great interest to young persons, and to a rarer, more serious disease, pernicious anemia, which many of the students may never encounter. Unit III on care of illness in the home is full of helpful

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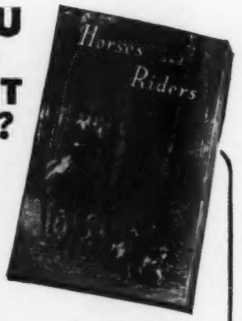

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advice and useful illustrations, but too much attention is given to descriptions and discussions of drugs which the home nurse should use only under medical supervision or not at all; for example, local anesthetics and drugs for irrigating the bladder. The chapter on entertainments and occupation for the convalescent or the bedfast is excellent.

Unit IV on safety and first aid is good as far as safety advice goes, but when it comes to first aid advice, much is included which is not first aid, and some of the advice is given in a slipshod manner; for example: "Bleeding from the bowel, if red, is usually caused by hemorrhoids. An injection of very hot or very cold water will usually stop it." How hot? How cold? Should such bleeding call for medical consultation? The chapter on dislocations is unsatisfactory, giving both too much advice and too little information. Backache, headache and menstrual pain do not belong under the heading of first aid emergencies. On the whole, sections I and III of the book are excellent; sections II and IV require extensive reediting.

W. W. B.

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The following list contains the addresses of publishers whose books have been reviewed in this issue of HYGEIA:

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CORRECTION

The new edition of Dr. Addison W. Baird's pamphlet "A Talk to Those About to Wed" (reviewed in HYGEIA, October 1938, p. 935) is priced at 25 cents. It is published and distributed by The Addison Press, 12 East 86th St., New York City.

"THE LAST ONE"

(See page 1107)

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EXERCISE

(Continued from page 1134)

believe that a rider is disqualified for speaking to his horse.

It might be added that most western, military and polo horses are trained to respond to the "neck rein"; that is, the pressure of a rein on the neck. If all reins are moved to the right so that there is a bit of pull on the right reins and the left ones press against the left side of the horse's neck he turns to the right, and vice versa. Evidently this is of use when the reins are held in one hand.

Balance and relaxation are the important factors in sitting well on a horse, and these things are learned best at the trot. In fact the rider who attempts to sit a slow trot will be astounded at the amount of discomfort consequent on lack of relaxation. The trot is a two-beat gait in which diagonally opposite feet strike simultaneously, incidentally producing an up-and-down movement of the beast's back, which tends to be transmitted to the person seated on it. It is this movement which becomes embarrassing to the rider who sits tensed and stiff. Speedily he finds that he inclines to be coming down when the horse is coming up, and an uncomfortable lack of harmony results.

The best single maneuver in learning to sit a horse well is the riding of a slow trot without posting; that is, rising to alternate steps of the horse. This necessitates adaptation to the movements of the horse and their rhythm. It should be practiced both with stirrups and without, the seat and position being exactly as described before. I have seen a young man who had never been on a horse before do this almost perfectly, because he heeded the admonition to sit completely relaxed as though in a chair and because he was adept at other physical activities and well coordinated. Other young men of my acquaintance who had ridden considerably have bounced disconcertingly because of tenseness. A good rider will scarcely leave the saddle at all when riding in this way, and it is useful to ride a bit at a slow trot without rising whenever starting out for a ride in order to gain the feel of the thing. Few physical activities will demonstrate more convincingly the value of relaxation and balance, although those two things are important in almost every physical skill.

The horse is stimulated to a faster trot by the same method as before, pressing with the heels behind the saddle, and this faster trot is usually ridden by rising or "posting." In

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BURNS

(Continued from page 1066)

be postponed until the doctor arrives; severe pain may be alleviated by immersing the burned areas in warm water.

While probably not a matter of first aid, the management of the resulting morbid conditions in these severe cases may be of interest. After healing, there may be extensive and disfiguring scar formation. These scars, when they occur about joints, will cause functional disability, stiffness, deformities and so on. To improve function and for cosmetic reasons, such scars should be treated by the proper type of plastic surgery or radiation. Following some burns, healing by keloid (a thickened scar) may occur. Keloids should be treated early, and for best results x-rays or radium should be used administered by those familiar with their use.

To summarize the first aid treatment: For burns of minor degree, a variety of remedies may safely be used, as the final outcome is not a matter of life or death; but in severe or extensive burns the first local application is of vital importance. In such cases it is better to try to make the patient as comfortable as possible without any local application and await the arrival of a physician. If something must be applied, it should consist of a wet dressing; no greases or powders should be used.

TUBERCULOSIS AMONG THE ESKIMOS

(Continued from page 1102)

that never before did they fall sick because they ate from each other's dishes, wore each other's garments or slept in each other's beds. The garments of deceased persons, whether they died from tuberculosis or from other causes, are invariably worn by the surviving relatives. To teach them the dangers of such things is practically impossible, because it lies beyond their ability to conceive of diseases being transmitted from living or dead persons to them. For this reason it is almost beyond possibility to enforce quarantine regulations in an Eskimo village.

In epidemic influenza entire villages have been wiped out because of the Eskimos' lack of understanding and their determination to visit the sick. So it is with tuberculosis. Adequate hospital facilities and isolation of all active tuberculous cases would do much to alleviate this deplorable situation. But without these things we are powerless to help them. Unless their native diet is restored to them, and as long as the white man's life is thrust on them, the medical functions which we may establish among them will be for naught. Any one who is familiar with the present situation among the Eskimos is bound to agree that, unless something definite is done about it very soon, tuberculosis will be the agent through which the Eskimo race will become extinct.

THE MAGIC OF TOYS

(Continued from page 1137)

But it cannot be accomplished by exhortation or by force. The only way to make a youngster concentrate is through interest. His endurance, however, must be fully respected.

Finally toys stimulate mental activity. To accomplish its purpose a toy must allow the child free exercise of his imagination and afford him the opportunity to employ his curiosity. In ancient times, before toys became a large industry, a prominent part of play in the life of the child was "riddles." The leader would describe an object as completely as he knew how and end up with the question, "What is it?" It was up to his listeners to name the object from the description. This form of mental exercise is most valuable in that it cultivates constructive thought. Today this sort of childhood diversion is among the lost arts, although the principle of the game is well preserved in modified and improved form. Pictures and puzzles, chemical and mechanical sets requiring the utilization of thought and action are useful adjuncts to mental processes.

Toys are valuable objects only as they serve the two primary purposes: to amuse and to educate the child. Both of these requisites may be fulfilled by choosing toys to fit the mental capacity of the youngster, with the thought uppermost in mind that they must appeal to his native capacity for imaginativeness, gregariousness, imitativeness, curiosity and love for adventure. The amusing phase is a conscious process in that the youngster employs toys as instruments of play. The educational phase is the result of proper utilization of these instruments; and though to the child wholly imperceptible, it is nevertheless a process of tremendous importance to his future mental and social development.

YOU AREN'T MY REAL MOTHER— OR YOU WOULDN'T MAKE ME EAT BREAKFAST!
AW-W-W. YOU'RE SO MEAN I'M GONNA RUN AWAY.
JAMES, YOU COME BACK HERE AND CLEAN UP THIS MESS OR I'LL WHIP YOU UNTIL...
STOP IT! JIMMY, YOU GO ON TO SCHOOL. MARY, YOU LISTEN TO ME...
LATER AT THE LECTURE
AS A CHILD PSYCHOLOGIST, I'VE COME ACROSS CHILDREN WHO HAD ACTUALLY COME TO DISLIKE THEIR OWN MOTHERS AS A RESULT OF BEING FORCED TO EAT.
YOU SEE, CHILDREN CANNOT BE EXPECTED TO KNOW THAT THEY SHOULD EAT CERTAIN FOODS. YET MOTHERS SEEM TO ASSUME THIS, AND FORCE THEIR CHILDREN TO EAT, WITH, OFTEN-TIMES, DISASTROUS RESULTS.
WHAT DO YOU MEAN BY DISASTROUS RESULTS?
THE CHILD THINKS THE MOTHER UNFAIR. AND THAT'S THE FIRST STEP TOWARD ALIENATION OF RESPECT AND AFFECTION. AND NOT ONLY THAT, BUT EMOTIONAL SCENES OFTEN LEAD TO DIGESTIVE DIFFICULTIES AND MAKE "NERVOUS" CHILDREN.
I HAVE A CHILD WHO "HATES" BREAKFAST. WHAT DO YOU ADVISE?
GIVE HIM A CHANCE TO TRY DIFFERENT KINDS OF CEREALS, UNTIL YOU FIND ONE HE LIKES. DON'T COAX OR FORCE HIM; KEEP MEALTIMES CHEERFUL.
YES, MRS. HAYNES, YOU DON'T HAVE TO WORRY ABOUT JAMES LIKING WHEATIES. CHILDREN ARE CRAZY ABOUT THEM.
I CERTAINLY LIKE THE IDEA OF GIVING HIM WHOLE WHEAT.
AND LOOK HERE, IT SAYS: IN THE MANUFACTURE OF WHEATIES NONE OF THE BRAN, WITH ITS VALUABLE PHOSPHORUS AND IRON, OR THE GERM, THAT PART OF THE WHEAT WHERE NATURE HAS STORED UP CONCENTRATED FOOD VALUES, HAS BEEN REMOVED.
WHEATIES CERTAINLY SEEM TO BE A WONDERFUL FOOD. I'LL TRY THEM TOMORROW MORNING.
UM-M-M! GEE! I'M GLAD YOU'RE MY MOM. NO ONE ELSE COULD EVER GET ME ANYTHING AS GOOD AS WHEATIES.
WHAT ARE THESE WHEATIES?
THEY'RE WHOLE WHEAT. AND THEY HAVE LOTS OF FOOD-ENERGY. TRY THEM. THEY'RE DELICIOUS.

WHEATIES SOLVED MY PROBLEM

Says Mrs. M. C. Gilbert, New Holstein, Wisconsin

"I have three small children. My oldest boys were so hard to get to eat their breakfast. It worried me because I knew they left the table hungry . . . Then I tried Wheaties—and my, what a change at the breakfast table."

"Don't force your child to eat!" say child psychologists. They say this is a first step toward alienating your child's affection. Also, these tense scenes often result in an upset digestion.

Instead, you are urged to try a cereal so irresistible your child can't help but *go for it!*

Try the new kind that's working wonders everywhere—the kind with the magic taste—Wheaties.

In gold-brown toasted flakes. Crispy, crunchy flakes. As light as snowflakes. As enticing and alluring to the childish imagination as a French confection. And—made doubly delicious by malt flavoring.

Wheat has always been the basic cereal food of most Americans. It furnishes abundant food-energy and a greater percentage of minerals than such grains as corn and rice.

Try Wheaties on your child. Note what a remarkable difference they make.

Another feature about Wheaties is the fact that so many champions of sports—the heroes of your children—approve them. This makes them even more attractive to your child. Order Wheaties from your grocer today. You will be glad you did.

"Breakfast of Champions"
is a reg. trade mark of General Mills

General Mills, Inc., Minneapolis, Minn.

"WAKE UP AND GET GOING" WITH WHEATIES

A "Breakfast of Champions"

with plenty of milk or cream and some kind of fruit

Wheaties and the advertising claims made for them are accepted by the Council on Foods of the American Medical Association.

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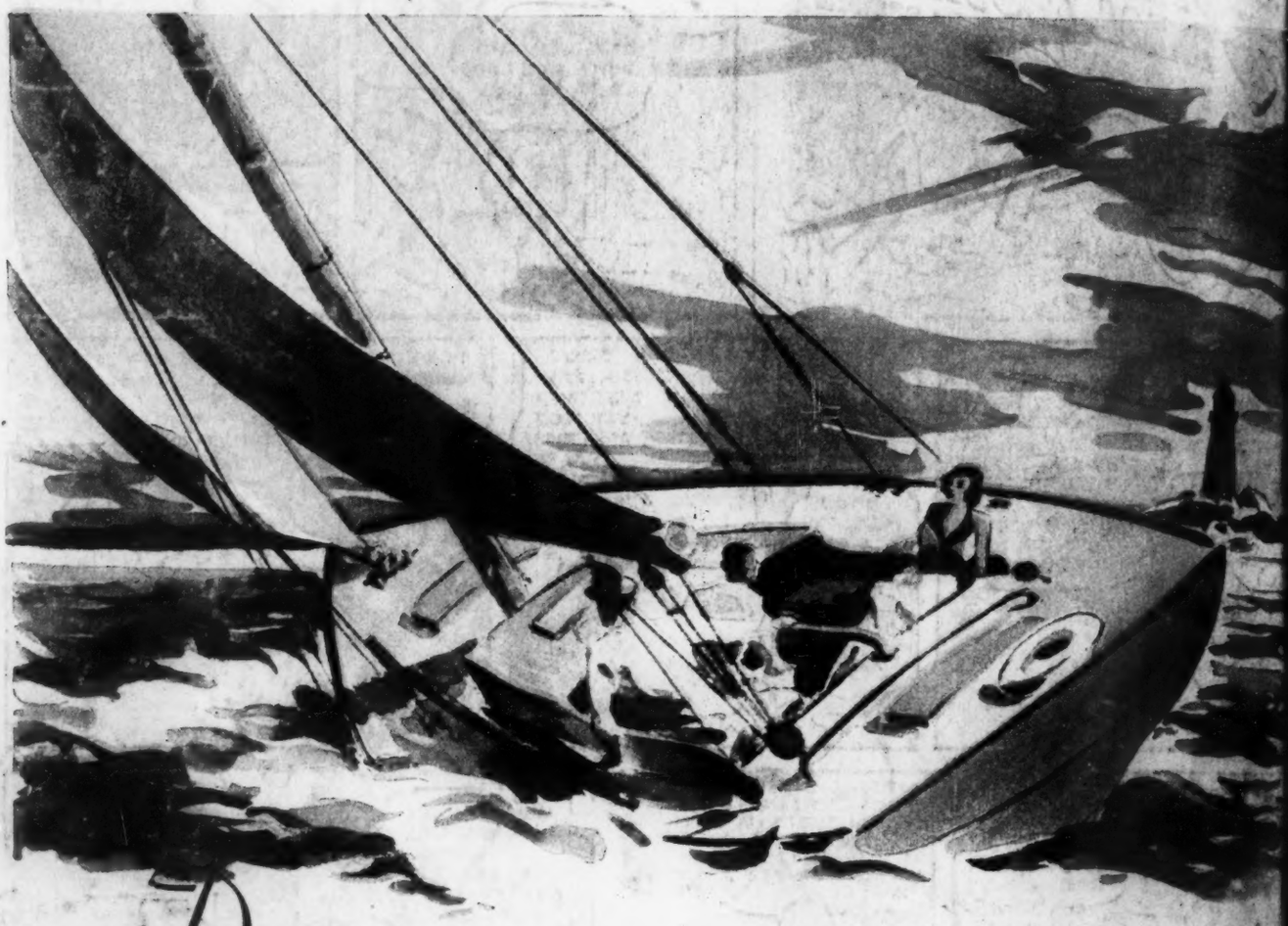

DURING all seasons of the year there are numerous minor injuries requiring first aid treatment. Prompt cleansing and application of an antiseptic are important in preventing infection. MERCUROCHROME, H. W. & D., supplies your antiseptic needs. It is economical in use because solutions do not deteriorate. It is antiseptic, non-irritating and non-toxic in wounds. It has a background of eighteen years' medical use. ¶ Use Mercurochrome (*dibrom-oxymercuri-fluorescein-sodium*) for all minor wounds. Do not neglect to call a physician in more serious cases.

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